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ORIGINAL ARTICLES.

PULMONARY ACTINOMYCOSIS; RECOVERY UNDER THE USE OF OIL OF EUCALYPTUS.

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The following case seems of sufficient interest to be worthy of record:

W. S., Male, thirty-seven years of age; married; Swede; rigger by occupation. On October 3, 1888, while working on a vessel, he was struck upon the head by a falling plank and thrown into the water. When rescued he had lost consciousness. He was immediately brought to the hospital and admitted to the surgical service. Upon examination he was found to be suffering from a wound of the scalp and a compound fracture of the nasal bones. His temperature on the evening of that day was 104° F.; pulse, 140; and respiration, 65. There were no physical signs which could be considered indicative of water in the bronchial tubes. The next day, October 4th, his temperature was down to 99.5° F.; pulse to 72, and respiration to 20. The second day after (October 5th) the temperature was normal, and it so continued until October 10th, seven days after the accident. During this time, having received proper surgical treatment, the scalp wound healed and the fractured nasal bones were rapidly uniting. On the evening of October 10th, the temperature rose to 101.5° F.; his pulse was quickened, and his respirations reached 30 per minute. This condition continued during the next two days, October 11th and 12th. During the night of the 11th, he complained of pain in the right side and began to have a slight cough. On October 13th, the temperature was somewhat lower and he was very weak. Signs of pulmonary inflammation becoming evident, he was transferred to the medical service.

The medical examination showed a fairly well-nourished man, who stated that he had always enjoyed good health, with the exception of two attacks of rheumatism in the feet, ankles, and knees. He admitted an attack of gonorrhea several years before, but denied syphilitic history. He alleged only a moderate use of alcoholic beverages. At seven years of age he had an attack of illness, nature unknown, which left him with an otorrhea continuing at intervals until the time of admission. He had been troubled some weeks with cough and dark-colored expectoration before coming under observation. Physical examination of the chest showed some dullness, subcrepitant râles, weak respiration, and unaltered voice sounds over the right base posteriorly.

The urine was acid; specific gravity 1016; no albumin, sugar, or casts. From this time on, during six or seven weeks, the temperature rose and fell remittently, and was accompanied by profuse sweatings, presenting a close approach to the pyemic type.

About October 16th, he began to have violent and prolonged paroxysms of coughing, with the discharge of an extremely offensive dark-brown sputum. The coughing attacks were frequently precipitated by change of position. The breath also became continuously offensive, though not always to the same degree.

October 25th, the physical examination of the chest showed nothing save a few bubbling râles at the right base and left apex.

November 1st, an examination of the sputum, by Dr. E. Hodenpyl, then pathologist to the hospital, was negative.

November 6th, in order to lessen the intolerable fetor of the breath and sputum, oil of eucalyptus was prescribed, five minims in capsules every four hours day and night, and spray inhalations of the same oil were given three times daily.

November 8th, the fetor of the breath and sputum was noticeably diminished. The oil being well borne the dose was increased to ten minims every four hours, and the inhalations were given every two hours.

November 12th, it was noted that the patient coughed less frequently and that the sputum had only the odor of eucalyptus. On this day another examination of the sputum by Dr. Hodenpyl resulted in the discovery of the specific organism of actinomycosis in "considerable numbers." Examination of the chest on this day showed dullness at the left apex extending down to the level of the nipple, with tubular breathing above the clavicle, and a weak respiratory murmur with prolonged and low-pitched expiration over the infraclavicular area. Over the dull area there were numerous large and small moist râles on both inspiration and expiration. There was dullness over the right base posteriorly; here the respiratory murmur was weak and accompanied by moist râles.

The patient now gained steadily in flesh and strength, and by December 11th, sleep, appetite, and digestion were all that could be desired. The cough and expectoration had entirely disappeared. The pulse, temperature, and respiration were normal. The use of eucalyptus was discontinued, and he was soon after discharged cured. At this time there was still slight dullness over the left apex, with high-pitched breathing and prolonged expiration in the infraclavicular space, and a similar dullness, with a feeble respiratory murmur and prolonged expiration, at the right base, but no râles in either locality.

The entrance of the actinomyces (ray-fungus,

streptothrix actinomycotica) into the bronchioles results in the formation of areas of pneumonia, or peribronchitis, which may ultimately break down and form abscesses of varying sizes. The disease may, and in fatal cases usually does extend to other parts of the body. It may invade the vertebræ, passing down and forming a psoas or lumbar abscess, or involve the anterior mediastinum, sternum, and pericardium. The ribs and costal tissues may become infected, and an abscess point externally in the same manner as in empyema necessitatis. Perforation of the diaphragm and subphrenic abscess may result, or the liver, spleen, and other abdominal organs become involved. Ordinarily, the affection, when pulmonary, is unilateral and basic, but, as in the case here reported, may extend to the apex of the opposite lung. Indeed, there is no part of the body in which metastases have not been found.

The clinical course of pulmonary actinomycosis is essentially that of a chronic pyemia, with symptoms pointing toward the lungs as the seat of infection. The pulmonary symptoms and signs resemble either tuberculosis or a fetid bronchitis such as occurs in connection with pulmonary gangrene, pulmonary abscess, bronchiectasis, or empyema perforating the lung. Like other diseases of a pyemic type it may be mistaken for typhoid fever. The diagnosis is only to be made by the finding of actinomycetes in the sputum or in the pus of abscesses and ulcerations. The tufts of the actinomycetes may sometimes be seen with the unaided eye in pus or sputum as sulphur-colored particles, resembling grains of iodoform. In view of the increasing number of instances in which this disease has been demonstrated it is desirable that in all patients presenting fetid breath and expectoration as a symptom, an examination should be made for the presence of the ray-fungus. A similar precaution should be taken in cases, apparently of pulmonary tuberculosis, but in which tubercle bacilli cannot be found.

The prognosis of pulmonary actinomycosis is very unpromising. Of thirty-four cases reported up to 1890, thirty-two died, a mortality of nearly ninety per cent., and in a very recent volume, Wood and Fitz consider the prognosis to depend upon the site of the disease. If this be such that surgical treatment cannot be applied, death is the almost certain termination.

Treatment.—Among remedies, potassium iodid, in doses of 40 to 60 grains daily, has received favorable mention, although most of the successful cases were those which were also amenable to surgical treatment. Jurinka, in reporting three cases in which cure followed the use of the iodid (one of which was perityphlitic, and, with the other two,

seems to have been surgically treated), states, as the result of experiments with cultures made in media containing the iodid, that the latter did not act as a parasiticide, but hindered the growth, and thus aided in the elimination of the organism from the system.

As a rule no reliance should be placed upon the results of a remedy employed only in one case. But if, as in this instance, a patient having a disease in which the prognosis is extremely bad, and further, which previous to the administration of a certain remedy is steadily advancing, begins to show improvement within three or four days after the new therapeutics is begun, and in a little more than one month has quite recovered, it is not a stretch of the imagination to attribute the arrest of the disease to the remedy employed. If the properties of the agent used in this case and the characteristics of the organism concerned are examined, it becomes still more likely that the conclusion reached is not an instance of *post hoc, propter hoc*. Leaving out of consideration the physiologic action of the oil of eucalyptus (which does not concern its value in this case), there is good evidence to prove that it has distinct antiseptic qualities. Binz finds that it acts more promptly than quinin upon the lower infusoria, and Wood endorses the statement of Gimbert, that its antiseptic power is very great. That it has a similar destructive action upon the Laveran organism must also be granted, although the majority of the observers to be mentioned made their reports before the possibility of accurate diagnosis by the blood examination became an accomplished fact. In spite of a lack of the demonstrated presence of the plasmodium, the testimony of Bohn, Carlotti, Gimbert, Haller, Lorinser, Musser, Tristany, and others, in reference to its curative power in malarial fever, is indisputable, and it is admitted to be useful in cases in which quinin is not tolerated.

The oil of eucalyptus after absorption from the stomach is eliminated by the lungs, skin, and kidneys. Its odor is usually very perceptible in the breath of those to whom it is administered. The perspiration and the urine may also have the odor of the drug. Bearing in mind its antiseptic action upon the lower infusoria and the plasmodium malarie, and its easily perceived elimination through the lungs, I desire to call attention to the fact that the actinomycetes are decidedly vulnerable to the action of germicidal agents. Hodenpyl, in his monograph upon this subject, states, as others do, that the actinomycetes do not withstand even weak antiseptics, and to a certain extent seem prone to die and undergo absorption or calcification in the tissues.

These facts render it extremely probable that recovery in the case here reported was due to the

antiseptic action of the oil of eucalyptus exerted upon the fungus during the elimination of the drug by way of the pulmonary circulation, the air-cells, and the bronchioles. The question whether or not the curative action of this oil, if such action be proved to exist, will be exerted upon other tissues than those of the lungs, remains to be solved by further investigation.

THE TREATMENT OF DELIRIUM TREMENS.

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DELIRIUM TREMENS, as described in the text-books, is literally only one form of a great variety of mental disturbances which follow the use of alcohol and other poisons. Many widely differing states are called by this name simply because they have common hallucinations and delusions and at times muscular tremblings. Alcoholic mania, chronic inebriety, traumatic delirium, febrile delirium, convulsive delirium, delirium from meningeal and cerebral inflammation, are the names of some of the conditions to which the general term delirium tremens is applied. In many of these affections the muscular tremblings are absent, though they all have similar hallucinations and delusions.

In the consideration of treatment some discrimination between causes should be made. The continuous or paroxysmal use of alcohol, directly or indirectly associated with the affection that is being considered, the remote use of spirits, with an immediate history of injury or of febrile states, of exhaustion and nutritive poisoning, all have a similar meaning. The nerve-centers are seriously disturbed, and sensorial hyperesthesia and exaggerated functional activity are present up to irritation and inflammation.

Jacobson says: "In many cases delirium tremens is due either to the action of bacteria or to intoxications from diseases of the digestive tract, the kidneys, or the liver. The symptoms indicate the same toxic agent, which in many respects resembles the poisons of infectious diseases. Injuries of the nerve-centers from blows, shocks, and violent perturbations are not infrequently followed by delirium tremens. Often an incubatory period precedes its development, and a marked self-limited duration of the case follows. In most cases a rise of temperature with acute albuminuria occurs, and when a fatal termination results, it is preceded by parenchymatous degeneration of the liver, kidneys, and heart. In all cases there are toxic states, indicating the presence of some poison whose elimination is encouraged by profuse action of the skin."

The treatment of delirium tremens requires careful

study of the history of the patient and recognition of general causes, and then, removal of all conditions which seemingly have been active in the causation of the disease. In most cases the use of alcohol is the first question to determine. Formerly the slow withdrawal of spirits was considered essential. In 1855 Dr. Peddie of Edinburgh treated a number of cases by the sudden withdrawal of all spirits and the use of antimony. His results were favorable. Then others followed, using various substitutes. Dr. Kerr of London at once withdraws spirits and uses aromatic spirits of ammonia. During more than thirty years the question of sudden or gradual withdrawal of alcohol has been agitated. While the mortality has decreased in cases in which spirits were at once removed, the opponents of this method have explained it as due to other causes.

In many large hospitals the practice is to continue the use of spirits in slowly diminishing doses in all alcoholic cases in which there is delirium. When the delirium is violent, alcohol is administered as an essential in maintaining the strength, and thus in avoiding a fatal issue. This teaching a careful study proves to be without the slightest support from clinical data. In the cases of thousands of criminals and paupers suddenly incarcerated in jails and prisons and deprived of all spirits, the best results follow. Most of these cases are in chronic inebriates very much debilitated by alcohol, many of them delirious, and the sudden withdrawal of spirits is the beginning of restoration to health.

Dr. Kerr says: "Delirium tremens is a toxic condition induced by alcohol, and to continue the use of this poisonous agent is to prolong its toxic action; each patient is weakened by the excessive and prolonged discharge of nerve energy and by muscular restlessness and convulsions. The more alcohol supplied, the greater the muscular restlessness and the greater the expenditure of nerve energy. Reaction with enfeeblement is inevitable, and the recovery of the patient is prolonged, and his peril increased."

My personal experience, consisting of several hundred cases, supports this view and sustains the assertion that sudden and complete withdrawal of spirits is the first essential in the treatment of delirium tremens. In my experience in asylum treatment, a hot bath, either hot air as in a Turkish bath with hot showers and free rubbing, or hot water alone with massage, are the first and most essential therapeutic measures. In private practice, hot tub-baths, free sponging with hot soap-water, and daily rubbings are required. Sequestration and full control of the patient, either in the home or in an asylum, is of course an essential part of treatment, and may be

best accomplished with the aid of strong attendants who will prevent the patient from injuring himself. Next in importance to free bathing is catharsis, with calomel and salines. This should at first be free irrespective of all weakness and apparent prostration which may follow.

The insomnia and muscular agitations are limited and will end in sleep and rest after the fourth or fifth day. After free catharsis and bathing sleep follows within twenty-four or thirty-six hours. This delirious period cannot be cut short by narcotics, and no remedies of this class should be used. The hallucinations and delusions may continue a week or two, with lucid intervals, which constantly increase in length.

The first and most important object of the treatment is the elimination through the skin, bowels, and kidneys of the toxic poisons which are present, either from the alcohol or the bacteria formed within the body.

The primary causes of delirium tremens are in all probability irritative poisons, rather than nerve exhaustion or profound anemia. Hence, feeding is secondary in importance to elimination, and no food should be given until free action of all the eliminatory organs is established. Then, hot and easily assimilable liquid foods are required. In most cases such foods given at long intervals of four or five hours are better borne than when given at shorter intervals. No drugs, such as tonics or stimulants are given until after the subsidence of the delirium and the period of sleep and exhaustion is fully established.

Then nitrate of strychnin or cinchona can be used; the former in $\frac{1}{16}$ -grain doses four times daily, and the latter in doses of 3 i of the infusion every four hours. The various combinations of ammonia, chloral, opium, digitalis, and the long list of coal-tar preparations are dangerous and should not be used. In some cases where bathing is impracticable the use of diaphoretic drugs, of which ipecac is the best, is excellent.

The muscular agitation is often a question of much importance. Forcible restraint is in most cases dangerous to the patient, and followed by more profound exhaustion than if partial liberty were allowed. The rule is to permit the fullest exercise compatible with the safety of the patient and his surroundings. The delusions and hallucinations are rarely homicidal or suicidal, but always of fear and dread of injury, and the patients can usually be quite easily managed by attendants. If the patient is robust and well-nourished and the season permits, open-air exercise should be permitted several hours daily; if he is weak and emaciated, the freedom of a large room or hall in which the air is pure is preferable to a close room of

any form. A clinical history of a few cases will bring out the plan of treatment found most effectual in my practice:

CASE I.—A builder who, after twenty years of moderate drinking, used spirits to great excess during two months. He became delirious, and had persecutory delusions and hallucinations, with muscular trembling. His family physician had freely administered chloral and opium without any results. On admission the patient was intensely agitated. He was forcibly held twenty minutes in the hot-room of the Turkish bath, and was freely rubbed and finally given a hot shower bath. He became calm and was placed in a large room where he could walk about freely. Four hours later he was given another bath with no resistance on his part, and this was followed by a quiet interval of three hours. Five grains of calomel, followed by sulphate of magnesia administered on admission, induced free action of the bowels five hours later, and was followed by a lucid interval. The third bath on the morning of the second day was followed by the first sleep, which continued three hours, and a distinct lucid interval.

The patient's muscular agitation was not restrained. He was taken out to walk in the yard twice daily, and always returned willingly to the asylum. The baths were also given twice each day; in the morning a hot followed by a cold shower bath, with free rubbing, and in the evening a Turkish bath which was followed by sleep. Hot milk and meat broths were given the second day at intervals of four hours. Recovery rapidly followed and the delusions disappeared completely after the first week.

CASE II.—In a second case, a robust farmer was brought under restraint to the asylum; after a large dose of magnesia and a prolonged hot bath his excitement subsided; a few hours later a second bath was followed by sleep and the first lucid interval. On all occasions he was permitted to walk freely up and down the ward until exhausted. No solid food was given until the second day, the diet consisting of hot milk administered at intervals. After the second day convalescence was uneventful.

CASE III.—A third case of alcoholic mania, with irregular paroxysms of muscular excitement and persistent insomnia, occurred in a man who was said to be incurable. Free catharsis followed the administration of calomel and sulphate of magnesia, and this, with prolonged hot baths, broke up the insomnia on the second day. The mania disappeared after the first week and natural sleep became possible. Complete final restoration to health occurred after four-months' treatment. In this case baths produced a most marked relief of the mental disturbances, and restricted diet seemed medicinal.

While in hospitals and asylums many means can be commanded which are not accessible in private homes, still in general the same line of treatment can be applied in all cases.

CASE IV.—A summer boarder at a farm-house

was seized with alcoholic delirium, after destroying a room in which he was confined. By my advice he was put in charge of two men and permitted to walk two hours through the fields. Then he was forced into a tub of warm water and vigorously rubbed. Cathartics and cold water were given, also two doses of infusion of cinchona (3 i) to break up the craze for alcohol. After a third dose of cinchona all desire for spirits left him, and after the third bath he slept two hours and woke up with a lucid interval. From this time he became convalescent.

In my hospital, after the first bath, patients never object to its repetition, and usually look forward to it with pleasant anticipation. In private practice these cases can be treated with but little difficulty, with the aid of strong capable attendants who will compel the patient to follow directions. In many cases the forcible removal of such patients to hospitals and asylums is associated with difficulties not free from peril. With good nurses, bathing facilities, space for exercise, and with absolute withdrawal of spirits such patients can be successfully treated at home. The old method, consisting of gradually decreasing doses of spirits, with various compounds of narcotics to produce sleep, is full of peril to the patient and most seriously complicates recovery in all cases. It may be assumed that in all cases of delirium following alcoholic poisoning the treatment must be eliminative, by natural means and hygienic measures; also, that muscular and mental exhaustion, with diaphoresis, are efforts of Nature to throw off the poison. Baths and free exercise follow the line of Nature's suggestion.

In the almost endless complications which are likely to follow and be associated with alcoholic toxemia, widely varying therapeutic indications may be present, but baths and elimination are practical in all cases. In many cases the removal of alcohol is followed in a short time by delirium, particularly when opium and chloral are freely given.

That the delirium is due to the withdrawal of alcohol is not true, but it is due rather to the narcotic drugs which have checked excretion. The delirium rarely ever subsides until the use of spirits is abandoned unless followed by catharsis and withdrawal of narcotics. The withdrawal of alcohol should always be followed by drainage through the skin, kidneys, and bowels.

The D.-T. prescriptions of public hospitals, so often mentioned as practical, absolute, therapeutic measures, are both dangerous and misleading, as the mortality reports prove. The practice in the Berlin military hospital of treating all alcoholics with salines, shower baths, and meat broths, with a very low mortality, is much nearer modern therapeutics in these cases.

TREATMENT OF PLEURAL EFFUSIONS.¹

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SEROUS effusions are frequently classified as (a) small, (b) moderate, and (c) large.

A small effusion is generally defined as one of two to four finger's-breadth at one base. In these effusions some authors claim there should be no active medication except that which is directed to restoration of the functions of the organs deranged by the fever. The patient should be kept in bed and a substantial nourishing dry diet prescribed, with occasionally a mild laxative, but there should be no purging, as such is not necessary, and only harasses the patient. Morphia may be of value, as it not only controls pain but "splints the pleura," places the patient in a better subjective condition, and is less constipating than opium. In vigorous patients hydragogue cathartics are useful, and under such circumstances Dr. P. Blaikie Smith of Aberdeen advocates the use of magnesium sulphate after Hay's method, *vis.*: give from 2 to 4 drams of the above-mentioned drug in the least possible quantity of water three times daily. Such medication is contraindicated when there is (1) urgent dyspnea, (2) phthisical tendency, (3) poor physique, and (4) purulent effusion.

To stimulate the action of the skin hot or vapor baths or small doses of pilocarpin may be tried. Regarding the use of salicylates, authors appear to differ. Talamon claims that sodium salicylate has a specific action in pleuritic effusions; others say it has a sudorific action, and others again, a diuretic effect, and nearly all agree that it is mainly useful on account of its power of increasing the elimination of uric acid and urates. Aufrecht, who introduced the use of salicylic acid in the treatment of pleuritic effusions, claims that it and not the salicylate of soda should be used, as he says the salicylate is weaker and produces marked secondary effects. He employs salicylic acid as follows: "Give the patient 90 grains per day, and advise, if within the first eight days there is no reduction in the amount of the effusion, that the physician should not despair, but stop the use of the drug one or two days, and then begin it again and continue several days longer with occasional interruptions of one or two days."

Rosenbach and Pohl discovered that salicylates introduced into the system were later found in all the healthy serous cavities as well as in those which were diseased. A number of authorities agree that sodium salicylate is useful as proving the nature of the effusion, *vis.*: if there is no decrease in the amount of the effusion under treatment with this drug, the fluid

¹ Fourth Prize Essay, MEDICAL NEWS' Prize Contest.

in the pleural cavity is purulent in character. Others again, hold that it is useful in all cases in which there is a rheumatic element, especially when combined with iodid of potassium, and may even do harm in non-rheumatic cases, in which digitalis or alcohol acts better. During the salicylate treatment the patient should be kept in bed, and the quantity of urine daily passed should be measured and recorded.

Koster gives sodium salicylate in 22-grain doses t. i. d., and also salicylic acid in 15-grain doses. One writer recommends liquor ammonia acetatis (3 ii to iv in milk every four hours with an alkalin effervescent), and claims that "it lessens the vascular tension and promotes the action of the skin and kidneys, and therefore lessens the amount of fluid."

Massage of the chest has been useful in some hands, as has also compression of the chest during expiration, five to ten minutes twice daily, and, when tenderness has disappeared, massage of the intercostal spaces should be applied.

An old formula consisting of potassium iodid, 5 grains, with syrup ferri iodidi, 10 minims, three times daily, has been found useful to promote absorption. In small effusions, if the fever has subsided and still the dulness persists, counter-irritation may be tried by means of the application of a fly-blister, unguentum rubri iodidi, or tincture of iodin.

As a local application the following is said to be beneficial:

℞ Guaiacol (pure) 3 i
Tr. iodi 3 vii.

M. Sig. Paint all this liquid upon the affected side every evening.

Following this application the temperature will fall, there will be profuse sweating, and the effusion will gradually subside.

Dr. Bowditch of Boston uses the following as a local application:

℞ Tr. iodi 3 ss
Spts. ætheris sulph. . . . q. s. ad. 3 i.

He directs that this should be painted upon the affected side once or twice, or until burning is produced.

Phenol vesication is recommended by Dr. Ollivier for children on account of their intolerance of cantharides and its preparations. The thirst cure is used by few, and consists of withdrawal of all fluids from the diet during two days, the use of lean meat, stale bread, and one-half pint of fluid on the third day, one pint on the seventh, and one pint on the eighth day. The jaborandi cure, which consisted of the administration of small doses of the fluid extract of jaborandi every three hours, is very rarely used.

In moderate effusions counter-irritation should be given a fair trial. Neuman uses simple blue oint-

ment (a piece the size of a hazel-nut) rubbed well in twice a day on the affected side. If the fluid is being slowly absorbed, restrict the patient to a dry diet and administer diuretics, such as digitalis and acetate of potassium, during three or four days, and then substitute caffeine (2 to 5 grains) with sodii benzoate (10 to 20 grains). This should not be given during the afternoon, or the patient will not sleep well. Dr. Howard considers that the administration of 1 grain of calomel three times daily, added to a pill of digitalis and squill, is excellent treatment. It is hardly necessary to add that care must be taken that the patient is not salivated.

It is held by some that the use of antipyrin occasionally leads to absorption. If the effusion does not diminish after the institution of some of the above measures, if after a two- to four-week's trial the affection remains stationary, then the question of paracentesis of the chest arises. In moderate effusions there is only one reason for aspiration, namely: to remove an effusion which Nature, after a fair trial, seems unable to do. In small effusions all fluid may be withdrawn, though the same teaching does not hold good when there is a large quantity of fluid in the chest. Here, if diuretics and purgatives have been of no value within three or four days, their use should be discontinued, and potassium iodid and the salicylates should be given instead. An iron tonic is indicated throughout the whole course of the disease.

Before aspirating an exploratory puncture should always be made under strict antiseptic precautions to ascertain the nature of the effusion. The objects to be gained by tapping are: (1) the relief of pressure on the lung; (2) the prevention of death from compression of the lung, and (3) the removal of purulent fluid. It has been found that removal of a portion of the fluid relieves the pressure on the lymphatics, and thus aids absorption.

Aspiration should be performed during the acute stage, and (1) when one pleural sac is completely filled, as shown by dulness reaching up to the clavicle; (2) if there is marked displacement of the heart, or if one or more murmurs are developed in the heart; (3) in double pleurisy, if both sides are one-half filled by fluid; (4) if serious symptoms, such as orthopnea or a tendency to syncope, supervene.

In the afebrile stage, when Nature apparently makes no attempt to, or cannot reduce the amount of fluid, aspiration should be performed. Allow a period of from one to three weeks to pass before so doing (unless there are serious symptoms), but delay should not be too protracted, for if the lung is compressed too long its elasticity may be destroyed and it may not regain its functions. Delafield, Osler,

Bristowe, Pepper, Peabody, and others are all decisive in commending the timely removal of fluid from the pleural cavity.

Some claim that aspiration causes the formation of adhesions by bringing the inflamed layers of the pleura together. As soon thereafter as the strength will permit, we are advised that hill-climbing and pulmonary gymnastics are useful, as is also the use of the pneumatic cabinet.

Paracentesis of the Chest.—Not very long ago this operation was greatly dreaded, and only performed as a sort of last resort, principally in purulent effusions; but now, with our almost perfect aspirators, it is one of the simplest procedures and may be successfully performed by any one possessed of ordinary skill.

The patient should be placed in a lateral position with the hand of the affected side on the opposite shoulder to widen the intercostal spaces. Previous to the operation administer a stimulant to the patient, such as whisky, with 3 to 5 minims of tincture of strophanthus, or a hypodermic injection of strychnia. Make the skin of the affected side and the needle of the aspirator thoroughly aseptic. Spray the site of puncture with ether or ethyl chlorid. The site of puncture usually chosen is the axillary line (sixth interspace), for the reason that here (1) the chest-wall is thin; (2) the ribs are fairly well apart; (3) the patient cannot see what is being done, and (4) there is no risk of wounding any important organ.

Never puncture over the site of a resonant percussion-note. Make a valvular puncture by drawing the skin upward as the needle is introduced. The needle should penetrate just over the upper border of the rib in order to avoid wounding the intercostal artery. Withdraw the fluid very gradually, and thus (1) cough will not be likely to start; (2) there will be less disturbance of the circulation in the veins, and the patient will not be likely to expectorate, and (3) pressure will not be taken off the lung too rapidly.

When the visceral layer of the pleura is felt to touch the needle the latter should be withdrawn a little, or it may cause cough.

If there should be pain or cough the aspiration should be stopped. In this connection Bowditch's precept should be remembered: "Suspend the withdrawal of fluid the moment the patient begins to suffer in breathing, even in the slightest degree."

If there should be signs of syncope, the reinjection of part of the fluid by reversing the action of the instrument is said to be useful. In moderate effusions remove all the fluid that is possible. In large effusions remove only part at once; for if all is removed collapse of the chest-wall may result. In large effusions be on the watch for edema of the lungs, and,

if it is present, apply dry cups to the back and give alcoholic stimulants. Under these circumstances nitroglycerin or atropia is said to be useful. Follow the operation by a hypodermic injection of from $\frac{1}{6}$ to $\frac{1}{4}$ of a grain of morphia to relieve the pain and cough which results from sudden expansion of the lung.

The contraindications to aspiration are: (1) shock and collapse, (2) general prostration, (3) complicating croupous pneumonia. The dangers are syncope and cerebral embolism. Sudden death has occurred during the withdrawal of fluid from the chest, and is said, by Dr. Andres of Philadelphia, to be caused as follows: "During the displacement of the heart the circulation is depressed, but as the fluid is removed the heart returns to its original position, and the increased current washes an embolus into the circulation which lodges in the pulmonary artery, thus causing instant death."

The same author recommends aspiration if the fluid reaches to the clavicle (as shown by percussion), even though the patient be comfortable and present no sign of pulmonary distress, and in these cases the presence of fever does not contraindicate the operation. After evacuation of the serum, Dr. Jubel-Renoy uses an injection of a sterilized solution (one per cent.) of zinc chlorid. He very slowly injects a small quantity of this, and then withdraws it within ten or fifteen minutes. Dr. Levaschew of Kazan recommends the withdrawal of a certain amount of intrapleural exudate and at once replacing it with an equal quantity of sodium chlorid solution. This is repeated, and after awhile the cavity contains nothing but a neutral saline solution, which is rapidly absorbed.

Gilbert of Geneva claims that in tuberculous cases the exudate contains a material analogous to Koch's tuberculin, and he withdraws into a syringe a cubic centimeter of the pleuritic fluid. He then partially withdraws the needle so that he can inject the fluid into the subcutaneous cellular tissues. The injection is followed by an active febrile reaction, and the exudate is gradually absorbed. He employed this procedure in twenty-one cases, and in nineteen there was recovery within two or three weeks. He says that "it is easy to perform and free from danger, but its mode of action is somewhat unexplained."

In multilocular pleurisy operate early, and puncture as low down as is compatible with safety in order to ascertain if there is a communication between the cysts, as is evidenced by a lessening of the fluid in the upper part of the chest. If not connected the cysts will require tapping at various points.

In hemorrhagic effusions, weak iodine injections into the pleural cavity may be tried. The patient

should be kept absolutely at rest in the recumbent position until the temperature has been normal eight days, the heart and respiration being the guides as to increase or decrease of the effusion.

Aspiration is not always successful in causing cure in case the effusion is purulent. Incision and drainage and irrigation with a solution of salicylate of soda or thymol have given satisfaction in some cases. Irrigations with solutions of phenic acid are dangerous on account of their poisonous effects. The indications are to get rid of the purulent effusion as early as possible, and in the easiest, safest, and most thorough manner.

The advantages claimed by the advocates of aspiration over incision are: (1) that it is simple; (2) that it is free from danger with ordinary skill; (3) that it does not remove the fluid too rapidly, and thus allow a gradual expansion of the lung; (4) that it does not require general anesthesia; (5) that following it there is no confinement to bed, and (6) that aspiration alone sometimes cures, as the effusion after one or two aspirations becomes serous and is then rapidly absorbed.

Of course, in aspiration in purulent cases, a larger needle must be used than is necessary in cases in which the effusion is serous. Laffan aspirates as soon as he finds a purulent effusion, and he believes that seventy-five per cent. of the pleuritic effusions in children are purulent, and also that death is sometimes caused by pleural injections. It is thought that septic hypodermic or aspirating-needles often cause a serous exudate to become purulent.

Osler states that he never observed a case of conversion of a serofibrinous fluid into a purulent one.

THE ASEPTIC TREATMENT OF RETENTION OF URINE.

By CHARLES S. HAMILTON, M.D.,
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PROFESSOR OF PRINCIPLES OF SURGERY IN THE STARLING MEDICAL COLLEGE, AND LECTURER ON CLINICAL SURGERY IN MT. CARMEL HOSPITAL.

THE glans penis and the urethra are the habitat of several varieties of micro-organisms, some of them capable of producing pathologic effects when carried into the bladder, or when invading the peri-urethral tissues through a trifling wound. While a healthy bladder has a certain power of resistance which may enable it to successfully cope with an infection of moderate intensity, quite the reverse is true of one habitually distended, such as may be encountered in cases of enlarged prostate. The deposit of micro-organisms in a bladder, the resistance of which is impaired, may prove the starting-point of a septic process which terminates only with the death of the affected individual.

Simple urethral fever, prostatitis, epididymitis, ureteritis, pyelonephritis, and pyemia are probably only varied manifestations of the same group of bacterial poisons. It is therefore a matter of the greatest importance that the use of instruments in the urethra and bladder should be accompanied by the most careful antiseptic and aseptic precautions. It must be admitted that no germicide, no aseptic method, will accomplish the result required, *vis.*: complete removal of pathogenic organisms from the field of operation. Though perfection is impossible, it should be our aim, and fewer disasters will then follow instrumentation.

When the physician is about to empty a bladder by mechanical means he should have in mind a certain definite routine to be followed, the object of which is three-fold: (1) Sterilization of the penis and urethra of the patient. (2) Sterilization of the instruments and hands of the physician. (3) Maintenance of the sterile condition until the operation is finished. Sterilization implies both cleanliness and the use of germicides—the former being probably the more important and essential of the two. One principle—a *sine qua non* to success—must be kept constantly in mind. No object, when once sterilized, should be allowed to come in contact with any unsterilized object. If such contact does occur, immediate re-sterilization is necessary. It is with reference to this point more than any other that we fail in carrying out the details of a perfect aseptic technic. For example, our precautions are in vain if we lay a sterilized catheter upon the bed or table until ready to use it; or if with well cleaned hands we draw the cork from an unsterilized bottle and proceed at once to handle sterilized articles. It would be well to remember that cleanliness in dealing with the bladder is just as imperative as in the lying-in chamber; for the possibility of infection is quite as great, though fatal results may not be so frequent. That which has been said applies quite as forcibly to the hands of the operator as to the instruments employed.

The following might serve as a description of one method of aseptic catheterization, the steps being, of course, subject to variations to suit circumstances:

The necessary articles will be:

1. Scrubbing-brush.
2. Catheter (rubber, woven, metallic, glass).
3. Lubricant. (Boroglycerid in glass-stoppered bottle, or vaselin, sterilized, in soft metal tubes).
4. A small glass syringe.
5. Towels, basin, and dish.
6. Bichlorid of mercury or carbolic acid.

Let some member of the family thoroughly scrub and repeatedly rinse a granite-ware basin and a veg-

etable dish, each holding one pint or more. I assume that these two articles or their equivalents can be found in any household. Put in the basin one pint of water from the kettle and a teaspoonful of carbonate of soda. Boil the catheters and an ordinary glass syringe in this solution five minutes, both having been cleansed before being placed in the soda solution. Mix ordinary weak carbolic or bichlorid solution in the vegetable dish, using by preference water from the kettle.

Now, the physician should scrub his own hands, being sure as to the condition of his finger-nails. Rinse them well and dip them in the antiseptic solution. Put a small clean towel to soak in the solution. The penis is now to be cleansed by scrubbing and rinsing, devoting particular care to the meatus. Lay the antiseptized towel over the thighs and abdomen in such manner as to leave the penis exposed. If there is some urethral discharge, repeatedly wash the anterior urethra with the syringe and antiseptic urethra solution. Take the catheter from the basin in which it was boiled and lubricate it with boro-glycerid, poured on it from the bottle by an assistant or a member of the family, and then introduce it.

After using the catheter, scrub and rinse it, and inject antiseptic solution through it. Put it away in a clean towel, or boil it again and put it away in carbolic solution, in which case it will be again ready for use. A one- or two-per-cent. solution of carbonate of soda is especially appropriate for boiling glass or metallic instruments. It would probably prove rapidly destructive to soft catheters. The ordinary rubber catheter may be boiled in clear water, though such treatment undoubtedly shortens its period of usefulness. Woven catheters will not tolerate boiling, with exception of a special variety which is rather expensive.

In lubricating the catheter, as little of the lubricant as possible should be allowed to get into the eye of the instrument; for it is apt to accumulate in that portion of the catheter distal to the eye and constitute a trap for filth. A three- or four-per-cent. carbolic-acid solution is the best antiseptic for the preservation of either soft or hard catheters, as corrosive sublimate very rapidly hardens rubber and tarnishes metallic instruments.

Aseptic catheterization of the female can hardly be accomplished without exposure of the patient. The same routine must be followed as in the male. Every medical man has encountered cases illustrating the persistent cystitis which may follow unclean catheterization in women. In many cases of retention repeated catheterization is necessary, sometimes at hours when the physician cannot be present. Generally the nurse, or a relative, can be trained to pass

the catheter in a clean, safe manner. Doubtless some objector will say that this proceeding is tedious and cumbersome; that life is too short for so much pains in so trifling a matter. I admit that the rules of surgical cleanliness may be violated, possibly seven or eight times out of ten, with impunity. The other two or three cases, however, may be very unfortunate. We should bear in mind that it is to such cleanliness as that described that modern surgery owes its advancement.

In a paper of this scope but little attention can be given to the mechanical features of urinary retention and their influence upon the aseptic progress of a case. In stricture of the urethra it is well to remember that no instrument which *can* pass an obstruction in the urethra requires the exertion of any force to *make* it pass. Urethral instruments should be introduced without the exertion of force or they should not be introduced at all. When resistance is encountered, either the instrument is too large or it is not in the right track; and when it is not in the right track, the slightest force may cause a wound of the unhealthy mucous membrane near the stricture with consequent extravasation and peri-urethral supuration.

In the treatment of retention from enlarged prostate, the soft catheter is indicated whenever it can be used, on account of distortion of the urethral canal and engorgement of the mucosa in the prostatic region. Hemorrhage into the bladder is very common even after gentle instrumentation, and the resulting clot, if not evacuated, constitutes a nidus for the growth and multiplication of bacteria. The first catheterization in these cases is attended with great responsibility; for the bladder at first lacks the tolerance of catheter life and septic organisms which it acquires when the catheter has been used during months and years. This is well illustrated in cases of long-standing inability to empty the bladder voluntarily; these patients disregard all rules of cleanliness and for a long time at least, escape the consequences. However, eventually, they too acquire and succumb to the aggravated cystitis and surgical kidney which we find as a final stage of this and other incurable inflammatory conditions of the genito-urinary tract.

Baby Incubators at the Circus.—In speaking of Dr. Lion's incubators, *The Lancet* (London) passes severe strictures on the custom now prevalent in London of making a commercial speculation of incubators, and says anent their exhibition at Barnum and Bailey's show, "What connection is there between the serious matter of saving life, and the bearded woman, the dog-faced man, the elephants, the performing horses and pigs, and the clowns and acrobats which constitute the chief attraction at the Olympia."

HOSPITAL REPORT.

THE TUBERCULIN TEST FOR THE PRESENCE OF TUBERCULOSIS.¹By W. P. NORTHRUP, M.D.,
OF NEW YORK.

THE following tests of the value of tuberculin for diagnostic purposes were undertaken in the medical wards of the Presbyterian Hospital in the spring and fall of 1897. With one exception the cases tested were all in adults.

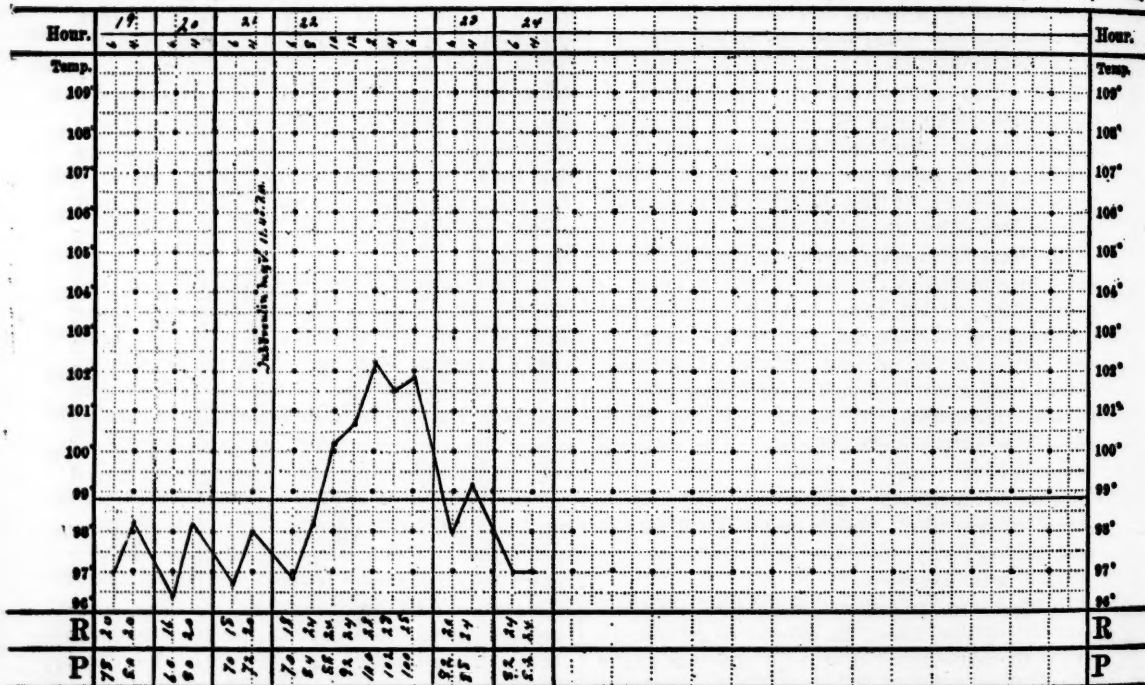
A paper by Dr. Trudeau, appearing at that time (MED-

cubic centimeter of distilled water with carbolic acid, one-half of one per cent.

This solution was frequently made fresh; it was kept in a cool place, and never used after it was more than two weeks old; it was always made in the same way, and injected with the same syringe, by the same assistant, and in the same part of the body, at the same hour of the day. In other words, a standard grade of tuberculin was used, in constant dose, and under uniform conditions.

Dose and Administration.—The initial dose used was at first half a milligram; later it was thought just as well to begin in adults with 1 milligram. This was injected subcutaneously in the dorsal region, between the

CASE XI.

Name Anna B.Date November 19th 1897

Reaction from 5 milligrams of tuberculin.

ICAL NEWS, May 29, 1897), served as a working guide, and certain oral communications from Dr. Trudeau assured the beginning of these investigations on mature lines. First of all it was necessary to have a reliable preparation of tuberculin and a uniform, diluted, injecting solution. The tuberculin used, made according to Koch's original standard, was furnished by Dr. E. L. Trudeau from the Saranac Laboratory, and kindly contributed for this work.

The diluted solution was prepared by Dr. George A. Tuttle in the pathologic laboratory of the Presbyterian Hospital, of a uniform strength, 1 milligram to 1

¹ An extract from the forthcoming Annual Report of the Presbyterian Hospital for 1897-98.

scapulæ, at midnight. The reaction was expected to begin from eight to twelve hours later, the temperature returning to normal from twenty-four to forty-eight hours thereafter. Injected at the above hour, the patient was under close observation during the hours of expected reaction, the temperature-chart showing its characteristics at the usual time of afternoon rounds. If there was no reaction from 1 milligram, two or more, often three, days were allowed to elapse, and a second dose of 2 milligrams was similarly administered. If this dose gave no reaction, 3, then 4, milligrams were administered after equal intervals.

Selection of Cases.—In order to judge correctly of the degree of reaction it was necessary that the patient

should have been some days without fever (temperature taken every four hours), or should have a chart showing a small daily uniform variation, its average being not above 100° F. Such patients were selected from their charts, without regard to the lesions from which they were convalescing, excluding only cases of cardiac lesions sufficiently severe to cause symptoms, over-nervous persons, and convalescents from typhoid and other exhausting diseases.

Among these may be mentioned cases convalescent from acute articular rheumatism, malaria, acute bronchitis, lateral sclerosis, anemia, postdiphtheritic paralysis, cerebrospinal meningitis, chronic nephritis, varicose ulcer

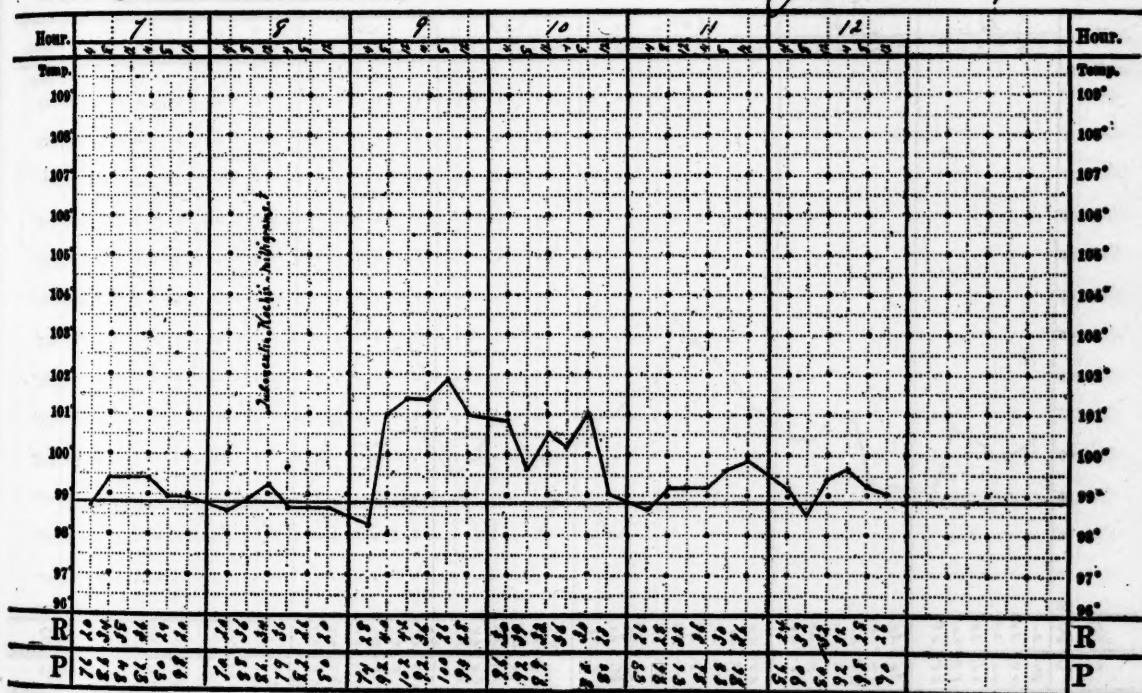
site of the injection when large doses were given. In several cases, to test this, the solution was made up fresh and used at once, without the addition of carbolic acid. Local irritation followed in the same patient to the same degree when no carbolic acid preservative was used. Also, a control test was made by injecting an equal volume of distilled water, holding in solution an equal amount of carbolic acid—no local reaction.

The points of greatest interest are:

1. Is there any harm to the patient in the test?
2. Is it of practical value?

The answer to the first inquiry is: In sixty-one cases tested, with doses varying from $\frac{1}{4}$ to 8 milligrams,

CASE XVI.

Name *John C. H.*Date *June 3rd 1897*

Reaction from 1 milligram of tuberculin.

of the leg, etc. These, it will subsequently appear, were among the class of "unsuspected cases," as regards tuberculosis.

Local Irritation.—Swelling, tenderness, and redness about the point of injection, lasting one to two days, were the features noted; no suppuration. Local irritations were only occasional. Pain in the joints, suspected to be tuberculous, was frequent but not constant. Pain in the chests of patients reacting led to the suspicion of localized tuberculosis, but physical signs did not usually make it certain.

It was thought that the carbolic acid used to preserve the solution might be the cause of the local irritation at

there was no evidence of any resulting injury, nor is it the opinion of the writer, or of any observer, that there was the slightest evidence of injury to any individual. Indeed, the patients after recovering from the reactions usually believed they were improved by its administration, and believed themselves objects of especial care, profiting by new and improved methods of advanced medicine. Repeatedly the staff and myself, in our rounds, had occasion to say that if we could come to these patients with the mental preoccupation that Koch's was a sovereign tonic remedy, we would feel assured of this correct judgment from what we saw and from what these patients told us. They avowed themselves much im-

proved, and were willing to remain in the hospital four days longer for the purpose of receiving another injection, however pronounced the reaction may have been, and however much they wished to go home.

General Reaction.—A characteristic reaction constitutionally manifested itself, usually, by rise of temperature above its habitual line, either the normal or the line of daily variations, the rise taking place six to twelve hours after the injection of tuberculin, the temperature continuing twenty-four hours or more above normal. In other words, the temperature-curve on the chart is characterized by a rather sudden rise, a continuance for a variable time at a high level, and a rapid decline. The patient has

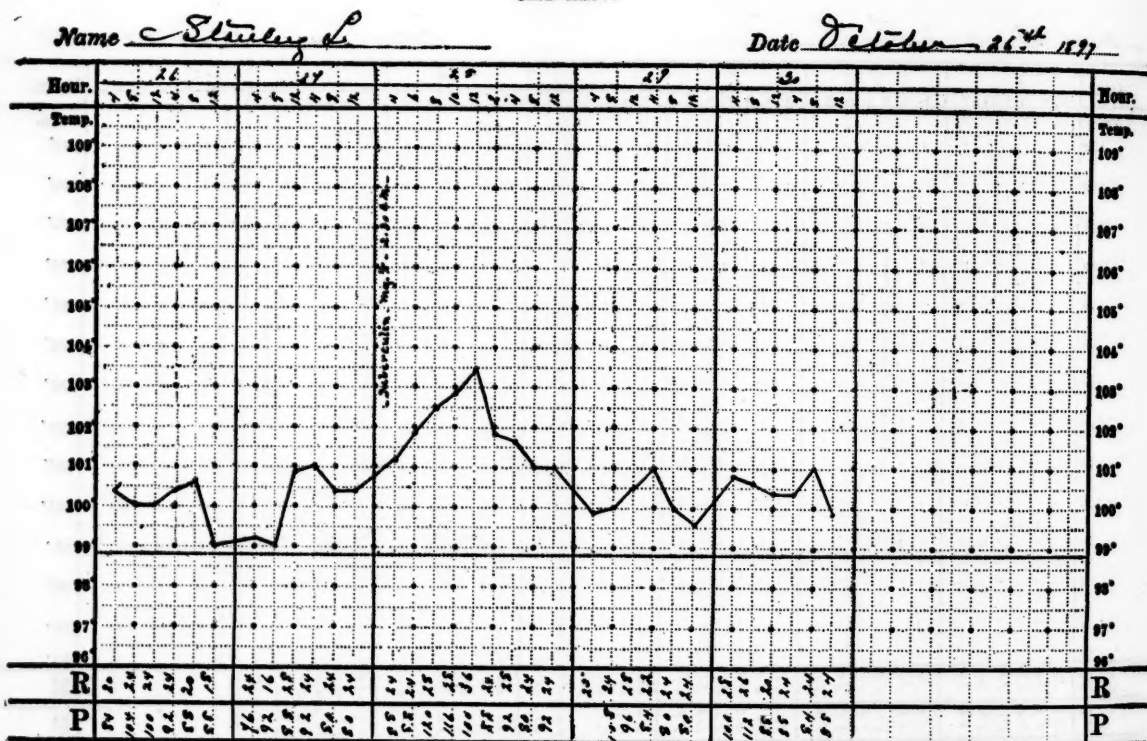
been carefully observed and faithfully recorded they will be accepted as a contribution to the discussion of tuberculin as an aid to diagnosis.

In the following cases no tubercle bacilli were found and no local reaction occurred unless mentioned:

1. Cases (sixteen in number) reacting in which clinically a diagnosis of tuberculosis could be made from: (a) Presence of tubercle bacilli in sputum; (b) physical (chest) signs; (c) previous history, bone lesions, and general condition.

CASE I.—Male, aged twenty-four years. Tuberculosis of hip-joint. Diagnosis confirmed by Dr. N. M. Shaffer. Treated several months by extension. Reacted

CASE XLIV.



Reaction from 2 milligrams of tuberculin.

a flushed face, headache, sometimes local pains in the joints or chest, sometimes nausea, seldom chilliness, seldom vomiting, usually malaise. These symptoms appear with the fever, and continue and depart with it, the patient feeling quite as well as usual thereafter and, one could be easily convinced, feeling better.

The cases to be considered are sixty-one in number. To answer the two questions proposed, a large number of patients must be injected; those believed to be free from tuberculosis, and having different ailments, as well as those suspected and those known to have tuberculosis. No definite conclusions can be drawn from so limited a number as here given, but if they bear internal evidence of having

to tuberculin, 3 milligrams; no reaction to less amounts. No evidence of tuberculosis elsewhere. Usual temperature ranged from 98.8°–99.8° F. Temperature, 6 to 12 hours after injection, 99°–101.8° F.; from 12 to 24 hours after, 101.8°–98.2° F. Thereafter temperature pursued its usual course.

CASE II.—Female, aged twenty-seven years. T. B. in sputum. Reaction from one-half milligram of tuberculin: Temperature before injection, 98.8°–99.8° F.; after 6 to 12 hours, 100°–101.4° F.; after 12 hours, 101.4°–100.4° F.; after 24 hours, 100.4° F. Malaise.

CASE III.—Male, aged thirty-six years. T. B. in sputum. Reaction from one-half milligram of tuberculin:

Temperature before injection, 98.4°-99.3° F.; after 6 to 12 hours, 101.3°-103° F.; after 12 to 24 hours, 103°-103.4° F.; after 24 to 48 hours, 100°-99° F. Pain in left chest.

CASE IV.—Male, aged nineteen years. T. B. in sputum. Reaction from one-half milligram of tuberculin: Temperature before injection, 98.4°-99.3° F.; after 6 to 12 hours, 99°-101.4° F.; after 12 to 24 hours, 101.4°-98.2° F.; after 24 to 48 hours, 98.2°-99.6° F. Malaise.

CASE V.—Female, aged twenty-six years. T. B. in sputum. Reaction from 2 milligrams of tuberculin: Temperature before, 99°-100.4° F.; after 6 to 12 hours, 100.4°-101.2° F.; after 12 hours, 101.2°-102.6° F.;

veloped, emaciated. No physical signs of pulmonary disease at present, no sputum.

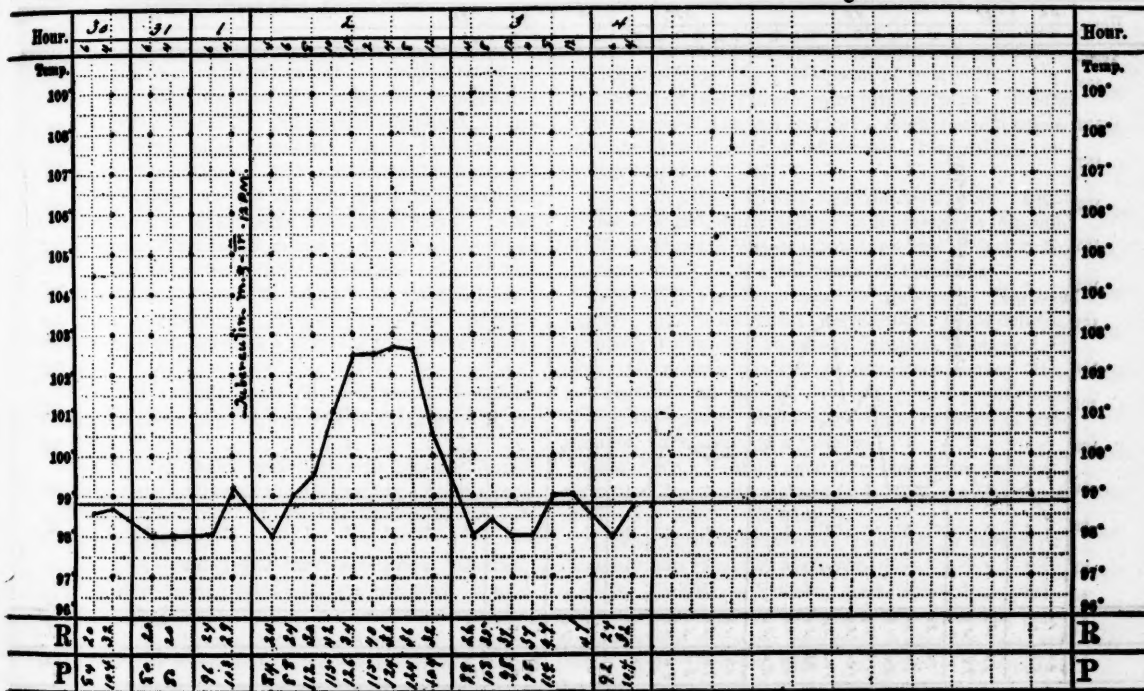
CASE VII.—Female, aged twenty-four years. Dulness, exaggerated breathing, and râles, front, right upper; night-sweats, loss of flesh, "white swelling" of knee. Reaction from 3 milligrams of tuberculin: Temperature before, 99.6°-98.4° F.; after 6 to 12 hours, 98.4°-102° F.; after 12 hours, 102°-102.4° F.; after 24 hours, 102°-100° F. Nausea, headache, muscular pains. Four milligrams, reacted in 16 hours, 103.6° F., with malaise returning to normal within 24 hours.

CASE VIII.—Male, aged eighteen years. T. B. in sputum; pulmonary and laryngeal phthisis. Reaction from

CASE XLVII.

Name *Hcus-S*

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Date *August 24 1897*

Reaction from 4 milligrams of tuberculin.

after 24 hours, 102.6°-99° F. Malaise.

CASE VI.—Male, aged sixty years. Arthritis; pronounced tuberculous by Dr. Shaffer. Slight reaction from 1 milligram of tuberculin; marked after 2 milligrams: Temperature before, 99°-100° F.; after 6 to 12 hours, 99°-102.4° F.; after 12 to 24 hours, 102.4°-102.8° F.; after 24 to 48 hours, 102.8°-99° F. Headache, pain in ankle, malaise. Subsequently 2 milligrams were given again without reaction. The question arose as to the establishment of tolerance by repeated doses. A year previously this man had had a similar attack in the same ankle, lasting two months. Thickening about bones of left ankle. Chest asymmetric (retracted?), poorly de-

veloped, emaciated. No physical signs of pulmonary disease at present, no sputum.

CASE IX.—Male, aged twenty years. Cavity, right apex, sweating, anemia. Reaction from 1 milligram of tuberculin: Temperature before, 100°-99° F.; after 6 to 12 hours, 99°-102.2° F.; after 12 hours, 102°-99.4° F.; after 24 hours, 99°-101.4° F. This reaction not being fully satisfactory, 3 milligrams were given nine days later. Temperature before, 101°-99° F.; after 6 to 12 hours, 99°-103.5° F.; after 12 hours, 103.5°-99.2° F.; after

24 hours, 99.2°–103° F. Temperature as observed on the chart is convincing that it was a reaction.

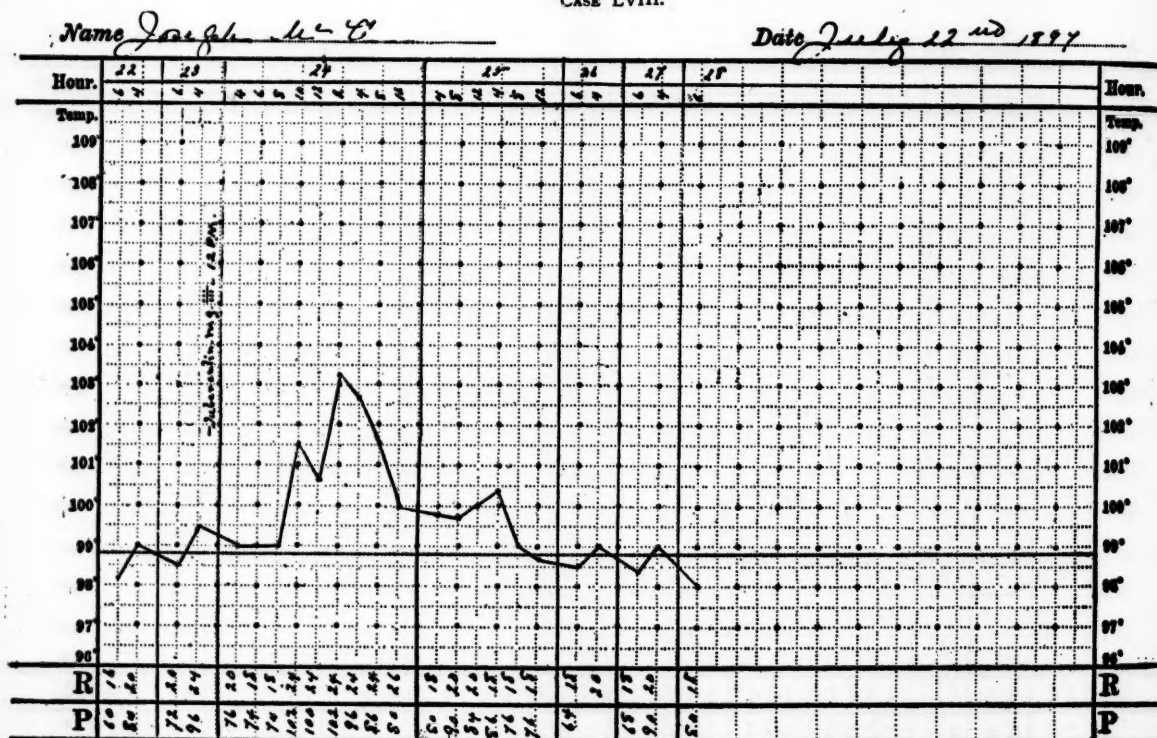
CASE X.—Male, aged thirty-six years. T. B. in sputum. Cavity. Reaction from 1 milligram of tuberculin: Short duration, 101.3° F. at the end of 16 hours. A week later, reaction from 2 milligrams: Temperature before, 98°–98.6° F.; after 6 to 12 hours, 98.6°–103.2° F.; after 12 hours, 103.2°–101° F.; after 24 hours, 101°–99.6° F. Vomiting, headache, malaise.

CASE XI.—Female, aged twenty-three years. T. B. in sputum; cavities both apices. Reaction from 5 milligrams of tuberculin: Temperature before, 96.6°–98° F.; after 6 to 12 hours, 98°–102.2° F.; after 12 hours,

ipheal neuritis. Not tuberculous in general appearance; no cough. Slight reaction from 1 milligram of tuberculin: Temperature before, 98.5°–99° F.; after 6 to 12 hours, 99°–100.4° F.; after 12 hours, 100.4°–99° F.; after 24 hours, 99°–99.2° F. Slight reaction from 3 milligrams; highest, 100.2° F., returning to 99° F. within 48 hours.

CASE XIV.—Male, aged forty years. Pleurisy with effusion two years before. Emaciated, looks tuberculous; dulness, exaggerated voice and breathing in apex, rales; irregular temperature, no expectoration. Reaction from 2 milligrams of tuberculin: Temperature usually 100°–101.5° F.; before injection, 99.8°–100.4° F.; after 6 to

CASE LVIII.



Reaction from 3 milligrams of tuberculin.

102.2°–100° F.; after 24 hours, 100°–98° F. Malaise. No reaction after 1 milligram; slight after 3 milligrams, with apparent increase of cough. Temperature reached 99.5° F. after 12 to 24 hours.

CASE XII.—Male, aged twenty-seven years. Cough, rales, emaciation, hemoptysis, pneumothorax. Reaction from 4 milligrams of tuberculin: Temperature before, 97.5°–98.6° F.; after 6 to 12 hours, 98.6°–100° F.; after 12 hours, 100°–101.6° F.; after 24 hours, 101.6°–100° F. Headache and local irritation. Five days later was given 5 milligrams, without reaction.

CASE XIII.—Female, aged twenty-eight years. Crep-
itant rales at apex and slight dulness; entered with per-

12 hours, 100.4°–104.4° F.; after 12 hours, 104.4°–103° F.; after 24 hours, 103°–99.8° F. Pronounced malaise.

First dose administered was one-half milligram, no reaction; second dose, 2 milligrams, reaction as above; third dose, 1 milligram. Temperature reached 103.4° F. Typical in all respects. Tolerance not established.

CASE XV.—Male, aged thirty-six years. Small cavity in right apex, and consolidation. T. B. found after long searching. Reaction from one-half milligram of tuberculin: Temperature before, 98.4°–99.3° F.; after 6 to 12 hours, 101.3°–103° F.; after 12 hours, 103°–103.4° F.; after 24 hours, 100°–99° F. Pain in chest, malaise.

CASE XVI.—Male, aged twenty-four years. Hemoptysis, loss of flesh, night-sweats, cough, expectoration, irregular temperature, crepitant and subcrepitant rales over left lung, with dulness at apex. No T. B. after repeated examinations. Slight reaction from one-half milligram of tuberculin, 101° F. in 24 hours. Reaction from 1 milligram: Temperature, 102° F.; 12 to 24 hours after injection, chilly, slight local swelling and tenderness. Reaction from 2 milligrams characteristic and well marked: Temperature before, 99.7° – 98.7° F.; after 6 to 12 hours, 98.7° – 103.5° F.; after 12 hours, 105° – 103.5° F.; after 24 hours, 103.3° – 100° F. Headache, chilly, nausea, general malaise, pain in left chest. Temperature returned to normal, and patient left hospital improved, having gained eight pounds.

2. Cases (nineteen in number) not reacting, in which there was no reason to suspect tuberculosis.

CASE XVII.—Female, aged thirty-two years. Cerebral tumor. On fifth injection of 4 milligrams of tuberculin, temperature after 16 hours, 101.4° F. No general symptoms. On sixth injection of 5 milligrams, temperature after 14 hours, 101.2° F. No general symptoms. Temperature normal after 24 hours. Patient left hospital. Diagnosis: Brain tumor. From the course of temperature observed on the chart this was not regarded as a reaction.

CASE XVIII.—Male, aged thirty-eight years. Lobar pneumonia. Previous to entrance cough during three months, and loss of flesh. Wife had phthisis. A child died of "meningitis." No T. B. found. No reaction from 5 milligrams of tuberculin. Recovery complete. Appearance such as not to create a suspicion that he was tuberculous.

CASE XIX.—Male, aged fifty-four years. Syphilitic pachymeningitis. No reaction from 2 milligrams of tuberculin.

CASE XX.—Female, aged twenty-six years. Gastroenteritis, anemia. Brother died of phthisis. Fairly strong and healthy appearing. No reaction from 1, 2, or 3 milligram of tuberculin.

CASE XXI.—Male, aged thirty-nine years. Sciatica. Large, healthy-looking man. No reaction from $\frac{1}{2}$ to 1 milligram of tuberculin. Slight local irritation.

CASE XXII.—Female, aged forty-five years. Gastritis. No suspicion of tuberculosis. No reaction from 1, 2, 3, 4, or 5 milligrams of tuberculin, either constitutional or local.

CASE XXIII.—Male, aged sixty-five years. Cerebral hemorrhage, hemiplegia. Large, robust man, engineer. No reaction from $\frac{1}{2}$, 1, 2, or 3 milligrams of tuberculin, at intervals of three days, till 8 milligrams were given. No reaction, local or constitutional.

CASE XXIV.—Female, aged one and one-half years. Chronic spinal meningitis; recovered. Lumbar puncture; fluid negative on guinea-pig inoculation. No reaction from $\frac{1}{2}$ milligram of tuberculin, grading up to 1 milligram.

CASE XXV.—Male, aged forty-one years. Multiple neuritis. No reaction from $\frac{1}{2}$ to 1, 2, 3, and 4 milligrams of tuberculin.

CASE XXVI.—Male, aged thirty-five years. Diagnosis

on entrance: Constipation. Well-nourished; negative history. No reaction from 1 milligram of tuberculin.

CASE XXVII.—Female, aged thirty-five years. Puerperal sepsis. Negative history. No reaction from one-half milligram of tuberculin. Left hospital.

CASE XXVIII.—Male, aged forty-nine years. Dyspepsia. No evidence of tuberculosis. No reaction from 1, 4, or 6 milligrams of tuberculin, local or constitutional.

CASE XXIX.—Female, aged thirty-three years. Malaria (plasmodium found). No reaction from 1 or 2 milligrams of tuberculin. Malarial chill set in forty-eight hours after last injection.

CASE XXX.—Male, aged fifty years. Cirrhosis of liver; pleurisy, serofibrinous. No T. B. found in sputum or fluid. No reaction, local or constitutional, from 1, 3, 5, or 7 milligrams of tuberculin.

CASE XXXI.—Female, aged fifty-five years. Malignant tumor of the kidney (sarcoma), confirmed by exploration. No reaction from 1 or 3 milligrams of tuberculin.

CASE XXXII.—Female, aged fifty-one years. Gastric ulcer, abscess of pancreas (autopsy). Slight rise of temperature after 3 milligrams of tuberculin. No malaise, uncertain reaction.

CASE XXXIII.—Female, aged thirty-six years. Right kidney enlarged; leucocytes in urine, moderate amount. No T. B. found. Well-nourished, no loss of flesh. No reaction from 1, 2, or 3 milligrams of tuberculin.

CASE XXXIV.—Female, aged fifty-six years. Tertiary syphilis. Poorly nourished; slight cough; slight dulness, breathing harsh, few rales, not constant, in upper right lobe. Continuous temperature for eleven weeks. History negative; no sputum. One, 2, 3, and 5 milligrams of tuberculin given. No malaise; slight elevation of temperature, not considered a reaction.

CASE XXXV.—Male, aged forty-two years; maltster. Cirrhosis of liver. No reaction from $\frac{1}{2}$ or 1 milligram of tuberculin. Died. No autopsy.

3. Cases (sixteen in number) reacting, in which tuberculosis was clinically suspected.

CASE XXXVI.—Female, aged twenty-four years. Diagnosis: Tuberculosis of ovaries or peritoneum; general abdominal pains and tenderness during five months; loss of flesh. Reaction from 1 milligram of tuberculin: Temperature before, 98.2° – 99.6° F.; after 6 to 12 hours, 99.6° – 99.4° F.; after 12 hours, 99.4° – 102.6° F.; after 24 hours, 102.6° – 100° F. Headache, malaise, increased abdominal pain. Nine days later, 1 milligram again given: After 12 to 24 hours, temperature, 101° – 100.5° F., with malaise. Six days later, 2 milligrams: Temperature, 12 to 24 hours after, 102.8° – 101.6° F. One week later, 2 milligrams: Temperature before, 98° – 98.2° F.; after 6 to 12 hours, 98.2° – 102.8° F.; after 12 hours, 102.8° – 101.5° F.; after 24 hours, 101.5° – 98.8° F. Malaise, moderate local irritation.

CASE XXXVII.—Male, aged forty-five years. Diagnosis: Tuberculous ankle. Father and sister died of phthisis. Ankle swollen, muscles of leg atrophied. Reaction from 5 milligrams of tuberculin twice: Temperature before, 99.2° – 97.8° F.; after 6 to 12 hours, 97.8° –

100.5° F.; after 12 hours, 100.5°-101.8° F.; after 24 hours, 101.8°-99° F. Pain in foot, general malaise.

CASE XXXVIII.—Male, aged eighteen years. Tuberculous arthritis of knees and elbow, opinion of Dr. N. M. Shaffer. Negative family history. Duration, five years. Slow reaction from 2 milligrams of tuberculin: Temperature before, 98.4°-100.5° F.; after 6 to 12 hours, 100.5°-100.2° F.; after 12 hours, 100°-101.6° F.; after 24 hours, 101.6°-100.2° F. At a subsequent injection of 2 milligrams, temperature rose to 100.6° in 14 hours, and in 70 hours to 102° F.; then fell to normal, and so remained.

CASE XXXIX.—Female, aged fifty years. Abdominal nodular masses. Bloody fluid aspirated from peritoneal and right pleural cavity. Loss of flesh, anemia, sputum. No T. B. found. Moderate reaction from 1 milligram of tuberculin. Malaise, nausea. Greater reaction from 2 milligrams three days later. Five days later, temperature before, 98.8°-99° F.; after 6 to 12 hours, 99°-101.8° F.; after 12 hours, 101.8°-99.2° F.; after 24 hours, 99.2°-99.8° F. Vomiting, malaise, abdominal pain, and pain in right side.

CASE XL.—Female, aged thirty-six years. Diagnosis: Lobar pneumonia and pleurisy (tuberculous?). Consolidation persisting for weeks; rales for two and one-half months; profuse night-sweats; temperature varying from 103°-98° F. Negative family history. Moderate reaction from 1 milligram of tuberculin. No malaise; reaction slight and not characteristic from 2 milligrams. Reaction from 3 milligrams: Temperature before, 99.8°-98° F.; after 6 to 12 hours, 98.8°-99.4° F.; after 12 hours, 99.4°-102.4° F.; after 24 hours, 102°-100° F. Pain in back and general. Patient left hospital in improved general condition; slight dulness and few rales. Eighteen days later returned for examination: Slight dulness, no rales; condition good; improved in flesh and strength; does her own washing.

CASE XLI.—Female, aged twenty-three years. Hemiplegia (hemorrhage), and malaria (plasmodium found). Small frame; looked tuberculous; expectoration (no T. B. found). Reaction from 1 milligram of tuberculin: Temperature before, 100°-99° F.; after 6 to 12 hours, 99°-99.5° F.; after 12 hours, 99.5°-103.8° F.; after 24 hours, 103.8°-99° F. Chill 6 hours after injection; sudden rise of temperature, and sudden fall; spleen large, plasmodium found. Five days later, 1 milligram of tuberculin: Temperature before, 98°-99.4° F.; after 6 to 12 hours, 99°-102.8° F.; after 12 hours, 103.6°-101° F.; after 24 hours, 101°-99° F. Malaise, local irritation. Guinea-pig did not develop tuberculosis.

CASE XLII.—Male, aged forty-five years. Chronic lead-poisoning (painter) and chronic nephritis. Dulness, right apex anterior, subcrepitant rales. Poorly nourished. Reaction from 3 milligrams of tuberculin: Temperature before, 100°-99° F.; after 6 to 12 hours, 98.2°-101.4° F.; after 12 hours, 101.4°-101.7° F.; after 24 hours, 101.7°-99.5° F. Headache, nausea, malaise.

CASE XLIII.—Female, aged seventeen years. Arthritis of right ankle; edema, pain, redness. Hemoptysis once in life. Slight dulness and exaggerated voice at

apex. Does not look tuberculous. Slight reaction from 2 milligrams of tuberculin. Pain in chest. Reaction from 3 milligrams (twice): Temperature before, 97.2°-98° F.; after 6 to 12 hours, 98°-102.2° F.; after 12 hours, 102°-102.8° F.; after 24 hours, 102.8°-99.4° F. Vomiting, malaise. After five weeks, still pain and tenderness in joint.

CASE XLIV.—Male, aged thirty-three years. Alcoholic. Dry pleurisy. Irregular temperature for ten weeks—98.6°-103° F. Loss of flesh. Reaction from 1 milligram of tuberculin: Temperature before, 99°-101° F.; after 6 to 12 hours, 101.4°-103.6° F.; after 12 hours, 103.6°-102° F.; after 24 hours, 102°-100° F. Malaise, slight local reaction. Subsequently characteristic reaction from 2 and 3 milligrams, with malaise. On a graphic chart this was believed to be a characteristic curve, a reaction.

CASE XLV.—Male, aged forty-two years. Pleurisy with effusion, persisting six weeks; loss of flesh. Does not look tuberculous. Slight reaction from 2 milligrams of tuberculin. Reaction from 3 milligrams: Temperature before, 99.2°-98.5° F.; after 6 to 12 hours, 98.5°-102.3° F.; after 12 hours, 102.3°-102.8° F.; after 24 hours, 102.8°-99° F. Marked local reaction.

CASE XLVI.—Female, aged twenty-three years. Convalescence from suspected irregular typhoid fever. Slight dulness at apex, few rales. Reaction slight from 3 milligrams of tuberculin: Temperature before, 99°-98° F.; after 6 to 12 hours, 98°-100° F.; after 12 hours, 100°-101° F.; after 24 hours, 101°-99.2° F. No malaise. Reaction considered fairly characteristic.

CASE XLVII.—Female, aged twenty-three years. Neurasthenia, with an uncertain history of pleurisy. Father died of phthisis. Rales; anemia; one hemoptysis (uncertain). Reaction from 4 milligrams of tuberculin: Temperature before, 98°-99° F.; after 6 to 12 hours, 99.2°-102.5° F.; after 12 hours, 102.5°-100.5° F.; after 24 hours, normal. Malaise.

CASE XLVIII.—Female, aged twenty years. Anemia; right apex, post. expiration prolonged and high-pitched. Negative family history; well developed. Slight reaction from 1 milligram of tuberculin. Reaction from 2 milligrams of tuberculin: Temperature before, 98°-98.4° F.; after 6 to 12 hours, 98.4°-100° F.; after 12 hours, 100°-101° F.; after 24 hours, 101°-99° F. Headache, nausea, and vomiting. Two milligrams again injected gave no reaction. Three milligrams gave 100.4° F. within 24 hours, with pains in back. Four milligrams gave a marked reaction—102.5° F. in 12 hours, falling to normal in 72 hours, with pains.

CASE XLIX.—Female, aged twenty-eight years. Small, poorly developed; cough mornings with expectoration. Reaction from 3 milligrams of tuberculin: Temperature before, 98.5°-99.3° F.; after 6 to 12 hours, 99.3°-100.2° F.; after 12 hours, 100.2°-100° F.; after 24 hours, 100°-98° F. Malaise. On fifth injection of 4 milligrams, temperature reached 103.4° F. in 17 hours. Headache and nausea.

CASE L.—Male, aged twenty-nine years. Bronchitis, dulness, right apex. Six months before had a "cold," lasting one month. Said he was always healthy; light

frame. Slight reaction from 3 milligrams of tuberculin, with pain in back. Reaction from 4 milligrams: Temperature before, 99°-98.6° F.; after 6 to 12 hours, 98.6°-99° F.; after 12 hours, 99.4°-102° F.; after 24 hours, 102°-101° F. Very marked local irritation, indurated swelling and tenderness, chill. Question—whether local irritation could not account for temperature.

CASE LI.—Female, aged twenty-four years. Acute rheumatism. Poorly nourished; anemia; losing flesh; cough with expectoration; "looks tuberculous." No chest signs. Reaction from 1 milligram of tuberculin: Temperature before, 98.5°-98° F.; after 6 to 12 hours, 98°-98.6° F.; after 12 hours, 98.6°-102° F., after 24 hours, 102°-99.5° F. Malaise, pains in legs.

4. Cases (seven in number) reacting, in which tuberculosis was not suspected or was clinically doubtful.

CASE LII.—Male, aged thirty-two years. Acute articular rheumatism. Brother died of tuberculous laryngitis. Reaction from 3 milligrams of tuberculin: Temperature before, 98.4°-98.6° F.; after 6 to 12 hours, 98.6°-102.8° F.; after 12 hours, 102.8°-103.6° F.; after 24 hours, 103.6°-99.5° F. Malaise. Three milligrams of tuberculin repeated after four days gave: Temperature before, 99.2°-99° F.; after 6 to 12 hours, 99°-104.2° F.; after 12 hours, 104.2°-104.3° F.; after 24 hours, 104.3°-98.3° F. Reactions marked and characteristic, and no foci found.

CASE LIII.—Male, aged twenty-one years. Post-diphtheritic paralysis of legs. Healthy-looking, not strong frame. Negative family history. Slight reaction from $\frac{1}{2}$ milligram of tuberculin; greater from 1 milligram. Reaction from 2 milligrams: Temperature before, 99.4°-99.4° F.; after 6 to 12 hours, 99.4°-101.6° F.; after 12 hours, 101.6°-102.6° F.; after 24 hours, 102°-99.8° F. Head-ache.

CASE LIV.—Male, aged two and one-half years. Cerebrospinal meningitis. Convalescent. One-fifth, $\frac{1}{2}$, $\frac{3}{4}$ milligrams, up to 1 milligram of tuberculin, with no reaction; 1 $\frac{1}{2}$ milligrams gave reaction. Temperature reached 101° F. within 12 hours, 100.8° F. within 14 hours. Fair reaction. Recovered from chronic spinal meningitis, but deaf; double optic neuritis. Spinal puncture; no tuberculosis in injected guinea-pig.

CASE LV.—Male, aged twenty-two years. Poor development; chronic hydrarthrosis; fluid clear; no growth on blood-serum. Reaction fair (101.9° F.) from 2 milligrams of tuberculin. Second injection of 2 milligrams: Temperature before, 98°-99.6° F.; after 6 to 12 hours, 99.6°-102° F.; after 12 hours, 102°-100° F.; after 24 hours, 100°-99.6° F. No symptoms. Patient under observation three months; condition unchanged.

CASE LVI.—Male, aged thirty-four years. Malaria; negative personal and family history. Three milligrams of tuberculin gave good reaction, and no malarial organisms found: Temperature before, 98.2°-98° F.; after 6 to 12 hours, 98°-100° F.; after 12 hours, 100°-102.2° F.; after 24 hours, 102.2°-99.2° F. Subsequently did not react to 4 milligrams.

CASE LVII.—Female, aged sixty years. Varicose ulcer of leg. Subcrepitan rales in both bases on en-

trance. Reaction from 3 milligrams of tuberculin (temperature 103.4° F.), local and constitutional. Reaction from 4 milligrams: Temperature before, 97.4°-98.5° F.; after 6 to 12 hours, 98.5°-102° F.; after 12 hours, 102°-103.2° F.; after 24 hours, 103.2°-100° F. General malaise, vomiting. Subsequent injection of 3 milligrams gave 104.6° F. within 12 hours. Malaise, vomiting, and local irritation. Six injections given, reactions from 3 and 4 milligrams.

CASE LVIII.—Male, aged forty-six years. Lateral sclerosis. No evidences of tuberculosis. Reaction from 3 milligrams of tuberculin: Temperature before, 99°-99.4° F.; after 6 to 12 hours, 99.4°-101.4° F.; after 12 hours, 101.4°-100° F.; after 24 hours, 100°-99° F. Three milligrams subsequently produced no reaction. Question—whether tolerance was established.

5. Cases (two in number) not reacting, in which tuberculosis was clinically suspected.

CASE LIX.—Male, aged fifty-two years. Pleurisy, serofibrinous (pneumonia eleven years before); loss of flesh. Dulness, persisting four weeks after aspiration, with moderate irregularity of temperature. Thirty ounces of fluid aspirated; no growth on blood-serum. No reaction after $\frac{1}{2}$ or 1 milligram of tuberculin; after 2, uncertain. Patient left hospital.

CASE LX.—Male, adult. Emphysema; hemoptysis. Sister died of phthisis. Winter cough, expectoration, sweating. Two hemorrhages, bright blood, on day of admission. Rales over upper right front and back. No T. B. found. No loss of flesh. Left hospital with lungs clear of rales. No reaction from 1, 2, or 3 milligrams of tuberculin. Dr. James felt certain this patient had tuberculosis.

6. No reaction. One case afterward proved tuberculous (autopsy).

CASE LXI.—Female, aged twenty-six years. Brain tumor, which on autopsy proved to be spindle-cell sarcoma—pressing upon the pons sufficiently to deform and displace it. In addition to this there were found at one apex a few adhesions, a number of old caseous nodules, and a few recent tubercles in near proximity. This case was never suspected to be tuberculous; examination of lungs negative. No reaction from 1, 3, or 5 milligrams of tuberculin: Temperature before, 96°-100° F.; with 1 milligram after 6 to 10 hours, 98° F.; after 12 to 24 hours, 100° F.; from 24 to 48 hours, 97° F. After 3 milligrams, highest temperature was 98.4° F. After 5 milligrams, 99.8° F. was the highest temperature 12 hours after injection. Question—Did pressure upon thermic centers cause the fluctuation of temperature and interfere with the test?

TOTAL, SIXTY-ONE CASES.

- Group 1.—Reacting, tuberculous, 16 cases.
- Group 2.—Not reacting, not tuberculous, 19 cases.
- Group 3.—Reacting, clinically suspected, 16 cases. Behaving as expected, Groups 1, 2, 3, total 51 cases; eighty-four per cent.
- Group 4.—Reacting, clinically doubtful, 7 cases.
- Group 5.—Not reacting, clinically suspected, 2 cases.

Group 6.—Not reacting, proved tuberculous, 1 case.

To return to the two principal inquiries of the paper, *viz.*, in this test (1) is there any harmful result to the patient and (2) any help to the diagnostician?

1. There was no possible injury observed in any case.

2. Of the total 61 cases, 51, or eighty-four per cent., did what was clinically expected, *i. e.*, the diagnosis was sustained.

The figures say that but 5 out of 6 tests confirmed the clinical diagnosis. Here let the answer to the second inquiry stand.

In this contribution to the discussion we have not brought forward the experiences in animal tests for tuberculosis, nor referred to the frequency with which small, unsuspected, tuberculous lesions are found at autopsies. The practical value of the test is to be worked out on the lines employed in this investigation. We have sought, so far as a limited number of cases can serve, to put forward answers to two practical inquiries and await an accumulation of experience to furnish the answer as to the practical value of the test.

If the tests were to be made on a second 61 patients, using the same strength solution of tuberculin, I would avoid slowly increasing doses. Tolerance may have been established in certain cases. These points have, however, been interrogated without definite results. For instance, after slowly increasing doses, patients have reacted to 5 milligrams of tuberculin. Again, patients have reacted to 2 milligrams, and have not subsequently reacted to 4 milligrams. Patients occasionally reacted again to 4 milligrams. Patients occasionally reacted to a small dose, failed on intermediate, and reacted again to larger doses. These reactions and failures have thrown doubt upon certain cases, and all doubt has been testimony against a favorable judgment on the action of tuberculin. In an effort to secure judicial fairness, the tendency has been to make the results less favorable than perhaps they should be. Again, the last case (61), proved tuberculous, the presence of "a few recent tubercles" about old cheesy masses, surrounded by firm adhesions—this can be assumed to correspond to the cases reported by veterinary commissions. Cattle having small recent tuberculous masses or glandular tuberculosis most commonly show more pronounced reactions than those having advanced tuberculosis. Just how active the "few recent tubercles" may have been one cannot say, but here is a case, proved tuberculous (beginning?), in which the test failed. Yet it must not be forgotten that the patient's temperature was fluctuating, and the lesion, brain tumor, sufficient to seriously disturb the physical economy. The effect of this upon the test no one can state in the light of present experience.

As a result of the experience here recorded it is to be advised:

1. To be sure of the quality and strength¹ of the tuberculin used.
2. To begin, in adults, with 1 milligram; if there is no

¹ Dr. Trudeau in a subsequent communication expresses a doubt as to the possibility, at the present time, of producing tuberculin of standard strength.

reaction after an interval of two or, better, three days give 3 or 4 milligrams.

SUMMARY.

The present list comprises sixty-one cases.

Sixteen patients believed to be tuberculous all reacted to the test.

Nineteen patients believed *not* to be tuberculous all failed to react.

Sixteen patients clinically believed to be, but never proved, tuberculous, all reacted.

Fifty-one patients, eighty-four per cent. (the above), behaved clinically as was expected.

Seven patients, clinically doubtful, reacted.

Two patients, clinically suspected, failed to react.

One patient, subsequently proved tuberculous (autopsy "a few recent tubercles"), failed to react.

No harm to any patient from the test.

Local irritation (never suppuration) occurred in both tuberculous and non-tuberculous patients at the site of injection; no significance.

Constitutional reaction has a fairly characteristic temperature curve, with headache, local pains, malaise.

It is the personal conviction of the writer that with further study of dosage and methods of administration, the tuberculin test will prove to be a material aid in diagnosis of latent tuberculosis.

To Dr. H. S. Carter, house physician, I wish to express my appreciation of his never-ending devotion to the details in connection with this investigation, and of his good observation and judgment.

MEDICAL PROGRESS.

Treatment of Wounds by Steam.—BEYER (*Deutsch. Med. Wochenschr.*, February 24, 1898), observing the satisfactory results which follow the use of steam as a disinfectant for surgical dressings, has applied it to granulating wounds, abscesses, etc., to facilitate cicatrization, directing upon them at a distance of 50 cm. (20 in.), a jet of steam at a temperature of 53° C. (127° F). The results were most favorable, and ulcerations which were resistant to treatment rapidly healed under the influence of the steam.

Concussion of the Brain and the Use of the Seton.—This is a time when physicians are again trying the famed remedies of olden times, blood-letting for instance, and it is therefore of interest to read (*Berl. Klin. Wochenschr.* February 21 1898) that HEIDENHAIN has employed a seton with success in six cases of concussion of the brain with resulting complications such as dizziness, pain, etc. In all of the cases mentioned, remedies of various sorts had been tried without effecting a cure, while the introduction under aseptic precautions of a seton of linen, through the thick skin of the back of the neck, did not fail in a single instance to bring about a cure. The seton was daily removed and a fresh piece of linen, smeared with an irritating salve was introduced, while the whole was covered with a light dressing.

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SATURDAY, APRIL 23, 1898.

SOME MEDICAL ASPECTS OF THE APPROACH- ING WAR.

"You know it is four killed to one wounded since the new ammunition came in. It is better so. I don't want to be wounded; and hate to think of being dreadfully mangled, and then patched up, with half my limbs and senses gone, yet 'a triumph of surgical skill.' No! I prefer to step down or up, and out of this world."

These are the words, penned to his brother by the American hero, Captain McGiffin of the Chinese battleship *Chen Yuen*, in the fight at Yalu with the Japanese, September 17, 1894. Such is the sentiment that will doubtless animate many a brave man in the contest that seems now so imminent, and such too will doubtless be his fate. It is estimated that in a naval engagement the torpedo-boat is least likely to escape destruction, and that in an attempt to accomplish its deadly work its crew is destined to certain death. Says a prominent daily: "A tiny torpedo-boat may wipe a five-million-dollar battleship off the sea and send five hundred men to the bottom, but the likelihood that any one on board the former will live to boast of the feat is very scant." Death will doubtless come either instantaneously by explosion, or by drowning the imprisoned men going down with the ship.

To men who meet this sad fate the medical arm of the service can be of no avail, but to the sick, the wounded, the suffering, the medical and surgical corps hold out assurance, by active scientific and efficient preparations, that reparative surgical skill is keeping abreast of the destructive agents of war.

Improved methods in the conservation of life and limb are keeping step with modern weapons. Hygienic and sanitary measures, too, are surrounding the unfortunate sick and wounded with conditions most favorable for their comfort and recovery. Some weeks since the MEDICAL NEWS recorded the fact that the Navy Department had purchased the fast steamer *Creole* of the Cromwell line, and was fitting her up as a hospital ship to accompany the squadron and be present at engagements.

Anent the new conditions surrounding a modern naval engagement the *Boston Medical and Surgical Journal*, in a recent editorial, speculates upon the more or less permanent but subordinate injuries which the participants are likely to carry away from a conflict, especially the effects of concussion upon men confined in a limited air space, as deafness, and the effect upon the nervous system generally. In this connection the writer makes prominent the difference in the shock experienced in a naval engagement and that produced by the sudden and unexpected accident in a railway train, although in the enormously destructive effects of the torpedo and submarine mine the unexpected is becoming a large factor in the shock of warfare. Neuroses of a most varied sort are born of the traumatisms of the gas explosion and the railway accident, as well as the traumatisms of war, and grow to quite hopeless proportions as the years go by. The analogy is so intimate that each may throw some light upon the other.

CORNELL'S MEDICAL COLLEGE.

IN accordance with the anticipatory announcement in the columns of the MEDICAL NEWS, the Board of Trustees of Cornell University has formally established a medical department to be located in New York City, and has accepted the retiring members of the Medical Department of the New York University as its faculty. This medical school will be known as the Cornell University College of Medicine. The establishment of the medical department at this time was made possible by the munificent

gift of Colonel Oliver H. Payne amounting to half a million dollars. The location of the buildings has not yet been definitely determined but will be in the vicinity of Bellevue Hospital.

The requirements for graduation will be a four-years' course of study. Two full years of the medical curriculum will be credited to the student who has gone through the literary department of Cornell University. This is in conformity with the rule which obtains in the Law Department. In accordance with the charter of Cornell University the holders of State scholarships will receive free tuition in the medical school as well as in other departments of the University. This department will also come under the uniform regulation of being open to women as well as men. The following is the roster of the faculty as far as it has been appointed:

William M. Polk, Dean and Professor of Obstetrics and Gynecology; Lewis A. Stimson, Professor of Surgery; Rudolph A. Witthaus, Professor of Chemistry, Physics, and Toxicology; W. Gilman Thompson, Professor of Medicine; George Woolsey, Professor of Anatomy and Clinical Surgery; Henry P. Loomis, Professor of Materia Medica, Therapeutics, and Clinical Medicine; J. Clifton Edgar, Professor of Obstetrics; F. W. Gwyer, Professor of Operative and Clinical Surgery; Irving S. Haynes, Professor of Practical Anatomy; Joseph E. Winters, Professor of Diseases of Children; Newton M. Shaffer, Professor of Orthopedic Surgery; Gorham Bacon, Professor of Otology; Irvin Sickels, Assistant-Professor of Chemistry and Physics; W. F. Stone, Instructor in Anatomy; Assistant-Demonstrator in Anatomy; George D. Hamlen, Instructor in Obstetrics and Gynecology; Lewis W. Riggs, Instructor in Chemistry; Percival R. Bolton, Instructor in Surgery; Warren Coleman, Instructor in Clinical Medicine; Edmund P. Shelby, Instructor in Materia Medica and Therapeutics; John Rogers, Assistant-Demonstrator in Anatomy; S. Connors, Instructor in Medicine.

In connection with the resignation of the members of this faculty from the University of the City of New York, the question arose whether the hospital positions occupied by them would be vacated by their resignation or whether they would carry the hospital position with them into the new school, thus securing the opportunity for clinical instruction

in the new field. This has been definitely settled by the recent decision of the Commissioner of Charities, in which he decrees that no member of the visiting-staff loses his hospital position by resigning his professorial chair in a medical school. If this ruling holds, and at present there seems no reason to doubt it, the new school will spring full-fledged into existence and active clinical work.

TWO WAYS OF REGARDING CARBUNCLES.

PHYSICIANS of New York and its vicinity, and probably of a much more extended area, have recently received reprints of two articles upon the treatment of carbuncles; one written by a well-known surgeon, and the other by an equally celebrated dermatologist. The methods of treatment advocated in the two articles are so radically different that a comparison of them is most instructive, the more so as the writers agree upon the causes which produce a carbuncle, and both affirm that the customary treatment by poultices and incisions is painful and dangerous. The surgeon says: "If all such (fatal) cases were enumerated they would represent quite a respectable figure." The dermatologist says: "The last patient incised (by him) died from this and other complications, but there has not been a single case with such result in my practice since."

If treatment by incision is so unsatisfactory, how shall it be improved? In their answers to this question our friends take opposite views. Says the surgeon, "the affected area is filled with deadly bacteria which will cause a slough of the immediately surrounding tissue, and may even spread further. Therefore, to avoid this risk as well as to save time, let us take out the whole thing." He makes a circular incision down to the deep fascia, and removes the carbuncle in toto. "The results" he adds "have been extremely gratifying."

The dermatologist declares that "the power of resistance of the body must have been at a low ebb, or the germs would not have found its tissues a favorable soil." He, therefore, gives a mercurial purge to relieve the torpidity of the liver, iron to tone up the system, and perfectly fresh sulphid of calcium, $\frac{1}{4}$ -grain every two hours, to keep suppuration in check. The carbuncle is covered with a salve of rose-water ointment, into 2 ounces of which there has been rubbed 10 drops of carbolic acid, and

2 drams each of fluid extract of ergot, starch, and oxid of zinc. During fifteen years he has treated carbuncles and other suppurative lesions in this manner, and has never been compelled to resort to the knife. Sometimes the inflammation is aborted, but usually the pus and sloughs readily come away, and with a minimum loss of time and of tissue.

Attention is directed to this subject, not because of the novelty of the treatment suggested, but because two men, both of whom are well-read, and who have for years occupied important hospital positions, hold such radically opposite views upon the treatment of so simple a trouble as a carbuncle. "Who shall decide when doctors disagree?"

ECHOES AND NEWS.

Ernest Hart's Estate.—The late Mr. Ernest Hart, editor of the *British Medical Journal*, left an estate worth about \$80,000.

Smallpox in England.—The epidemic of smallpox which has been prevailing in Middlesborough, England, is now said to be fairly under control, although more than 400 patients are still under treatment in the hospital. More than 1200 cases have occurred.

Presidency of the General Medical Council.—Sir William Turner, who holds the chair of anatomy at Edinburgh University, has been unanimously elected to the presidency of the General Medical Council of Great Britain made vacant by the death of Sir Richard Quain.

An Attractive Feature of the Coroner's Jury.—According to the *Scientific American*, twenty-two business men who acted as the coroner's jury in the investigation of the recent great fire in London, England, and served fourteen working days, received four pence (eight cents) each as compensation.

A Physician Victorious in a Malpractice Suit.—Dr. C. D. Palmer of Cincinnati, against whom a malpractice suit was brought in the name of a Mrs. Eiselein, may well feel relieved that the case has been decided in his favor. The suit was begun about eight years ago, and has been stubbornly contested.

Decrease in the Number of Medical Students.—According to the *Lancet* (London), there seems to be in England a decrease in the wild rush by young men into the medical profession, and figures in the Medical-Students' Register are quoted to prove it. In 1897 the smallest number were registered since 1871.

Up to the Standard in Medical Requirements.—The Western University of London, Ontario, has been admitted by the Council of the Royal College of Surgeons, England, to the list of institutions recognized by the board at which

the whole curriculum of professional study may be completed, and whose graduates in medicine are admissible to the final examination.

The After-Care Association.—In London this association, the only one of the kind in England, does much good work in assisting poor persons who have been discharged "recovered" from insane asylums. During the year 1897, 147 cases were brought before the council as compared with 135 cases during the preceding twelve months. Of the 147 cases 105 were in females and 42 in males. Assistance was given by boarding them out in cottages in the country, by gifts of money and clothing, by the finding of occupations, and in other ways.

Imbecile Farm for Ohio.—The news comes from Columbus, Ohio, that the Legislature of that State has passed the Alexander bill, which provides for the establishment of an imbecile village near Columbus. The theory of the promoters of the bill is that agricultural pursuits tend to raise the standard of intelligence of imbeciles. The bill calls for the appropriation of \$150,000 for the purchase of land upon which the imbeciles, who are to be divided according to intelligence, are to reside. The farm is to be an adjunct of the Asylum for Feeble-Minded Youths.

Leprosy in Crete and the Balkan Peninsula.—Dr. Ehlers of Copenhagen states that leprosy is widely disseminated in the Balkan Peninsula. This region has long been reputed a center for leprosy, but precise information has not hitherto been obtained on account of the lack of trustworthy statistics. Rumania alone has been noted for correct information and systematic investigation with regard to this question. Dr. Ehlers, in the course of a long journey in the Balkans, has come across lepers almost everywhere throughout the peninsula. Crete also seems to abound with them. "The Cretan lepers," he says, "present all the ordinary symptoms of leprosy as seen elsewhere, but the disease is less severe there than it is in the countries of the north. This difference is undoubtedly due to the climate."—*London Lancet*, March 26.

Personal Efforts in Opposition to the Antivivisection Bill.—Dr. Howard A. Kelly recently sent out a circular letter asking various members of the profession to use their personal influence with senators and congressmen to secure their opposition to the Antivivisection Bill now before Congress. Pursuant to this request, the editor of the *MEDICAL NEWS* sent urgent letters to both of the New York senators. In response thereto Senator Platt replied that he is committed to a policy of opposition to that measure, and will do all he can to defeat it. Senator Murphy promises that the matter will have his very earnest attention. Is it not possible that a sufficient number of influential letters may secure a more positive statement from the latter official? Letters should be at once written to the various representatives as well as to the senators.

Night Duty for Adolescents.—Under this heading the *Medical Press and Circular* (London) says: "It would

be difficult to exaggerate the services rendered to the public by the admirable organization which provides for the prompt services of messengers at all hours of the day and night. Nevertheless, one cannot but commiserate the fate of the lads who are called upon to pass the night on this fatiguing duty, especially when, as is often the case, they are of microscopic dimensions, and, therefore, presumably of very tender age. It cannot be doubted that the employment on night duty of undeveloped and still growing boys must be fraught with grave danger to their future careers from a physical point of view, and we would suggest to the managers of these institutions the propriety of restricting night duty to youths not less than sixteen years of age. Otherwise, it may be necessary to agitate for an amendment of the existing laws on the employment of labor, in order to protect these willing little workers against themselves.

Obituary.—Dr. George Hoppin Humphreys died on the 15th inst. at his residence in New York City. He was born in Philadelphia in 1834. He studied in the University of Pennsylvania, and was graduated from Jefferson Medical College. He completed his medical studies in Paris and Vienna, and came to New York in 1859. When the war broke out he joined the Ninth Regiment, Hawkins' Zouaves, as surgeon. After the war he settled in New York as a general practitioner. Dr. Humphreys was a member of the Academy of Medicine and the County Medical Society, and also of the Loyal Legion, and the Century and Union League Clubs.—Dr. Joseph F. Colgan of Brooklyn, died April 8th of acute tuberculosis. He was a native of that city, born there about thirty-two years ago, and has been in the practice of his profession there since March, 1890, which was the date of his graduation at the Long Island College Hospital. He was a young man of excellent attainments, and of high promise. The duration of his final illness was about four months. He was unmarried.

The American Orthopedic Association.—The next annual meeting of this association will be held at Boston, May 17, 18, and 19, 1898. In addition to a very complete and interesting scientific program, the local members of the association have evidently prepared an unusual variety of entertainment. A visit has been planned to the Industrial School for Cripples and Deformed Children, where the methods of instruction will be explained and the school inspected. A clinical session will be held on the afternoon of the first day of the meeting at the Children's Hospital. Cases of interest will be shown and the work-shop and museum will be inspected. In the evening an extra session will be held at the Harvard Medical School, and a paper and demonstration on "Tuberculosis of Bones and Joints" will be given by Dr. Edward H. Nichols, of Boston. Drs. Warren and Councilman will discuss this paper. Members are also invited to visit the Boston Normal School of Gymnastics (founded by the late Mrs. Hemenway for the purpose of physical training and massage). A carriage drive will be taken through historic Boston, including Cambridge.

Smallpox in North Carolina.—The most recent cases of

smallpox in this State were in Clay county, and Dr. Sanderson, Superintendent of Health of that county, writes that the patients are all well. Considering the unpromising surroundings of the imported cases, the local authorities have done well. In Wilmington two cases occurred, both individuals being infected in South Carolina; no deaths; no extension. In Charlotte, total number of affected persons was five, three infected in South Carolina and two (children of one of the three) taking the disease from the father; two deaths; no further extension. One case, from Birmingham, Alabama, occurred in Alamance county, near Gibsonville. This was the only case there; recovery. A young man returning from North Georgia to his home in Clay county brought the infection with him and gave the disease to his family, every one of whom—ten in all—were attacked, but none died. While the color in these last-named cases was not given, it is more than probable that the patients were white, as negroes are scarce in the mountains, but all the other cases occurred in negroes.—*N. C. Bulletin* for March.

Permanent Blindness Not Due to Belladonna—a Physician Wins His Case.—The effect of belladonna upon the human vision was considered in a libel suit which has recently been reviewed by the Appellate Division of the Supreme Court at Albany, New York. The plaintiff in the action was a physician who treated the defendant's daughter for some ailment of the eyes, and in the course of the treatment administered belladonna. The girl subsequently became blind, and her father attributed the loss of her eyesight to the unskilfulness of the plaintiff and his ignorance in giving her belladonna, and thus producing her blindness. The doctor sued him for libel for publishing statements of this purport, and upon the trial a material inquiry was what were the actual effects of administering belladonna in like cases. Every medical witness testified that belladonna would not, and indeed, could not cause blindness in any person. They all agreed that the drug produced a dilation of the pupil, accompanied by a partial loss of vision, but that this was only temporary and the effect would gradually pass away. The proof on this point was so clear and conclusive as to leave no doubt in the mind of the Appellate Court that the unhappy father was mistaken in holding the doctor responsible for the misfortune of his child.

A Modern Aseptic Hospital Department.—The following are some of the details which come to us in a description of an ideal aseptic "ward" or room for one patient at the Temperance Hospital on Hampstead Road, London. The walls and ceiling are made of enameled glass tile, having a pale pink hue, with all the angles rounded. The floor is of marble mosaic, the angles also being rounded. Almost the whole of the wall facing west is plate-glass window. By this means a splendid light is obtained, which can on occasion be screened by an external blind. Below this large window is the fireplace, the flue being diverted to either side. The upper fifth of the window is so contrived as to open valvewise inward, this result being obtained by mechanism external to the ward. A small area of the glass-tiled east wall is correspondingly

made to open, but when closed it is flush with the wall. Thus, free aeration can be insured. For ordinary ventilation a glass-lined air-shaft is provided delivering obliquely upward; in this shaft is placed a fan worked by electricity. The air-supply for this is drawn from high above the hospital buildings, being also filtered through cotton wool in its passage down the shaft. Artificial lighting is effected by electricity by means of a sunlight in the center of the ceiling. In a small glass-tiled recess are additional electric lights; when not required, this recess is closed by a glass door fitting flush with the wall. The furniture is entirely of metal, and can be washed with boiling water without fear of injury.

CORRESPONDENCE.

SMALLPOX AGAIN.

To the Editor of the MEDICAL NEWS.

DEAR SIR: I read Dr. Parke's letter on "Smallpox in Alabama" in the MEDICAL NEWS of March 26th with much interest, but I must confess that I cannot see any grounds for his belief that compulsory vaccination would have eradicated the disease. He declares that "the present epidemic has been characterized by the mildness of the cases, indeed, so mild that the colored people prefer it to vaccination." Will he please inform us why it has been so mild? It cannot be because of vaccination, for he tells us that the people would not submit to that. Then why was it mild? We should like to know, also, why he feels so confident that vaccination would have ended the epidemic? Does he know that it is a specific for smallpox? If he does, why then has it not proven to be so heretofore? I have never known it to be a specific with any one except those whom it has killed, and, therefore, is this not why so many refused to be vaccinated, preferring to risk the smallpox? If it is not a specific why does the doctor want to force it on the people? Is not strict isolation of patients and strict sanitation the safest and best exterminator of this affection? Let us hear from the doctor again.

ISAAC L. PEEBLES.

HATTIESBURG, MISS., April 16, 1898.

REPORT OF AN OPERATION FOR SPINA BIFIDA.

To the Editor of the MEDICAL NEWS.

SEVERAL of my professional friends have asked me to report an operation for spina bifida, which, with the able assistance of Dr. J. M. Davis, was performed October 3, 1896. Not thinking the work of a country surgeon would be of interest to the readers of the MEDICAL NEWS, the operation was never reported. However, a short time ago, in looking over "Pepper's System of Medicine," vol. v, Edit., 1886, it was noted that only twenty-three cases of excision, with separate suture of the sac (the operation we did), with sixteen successful results, had been reported. This encouraged me to report my own case, which, if it gives no other information, will show what we country fellows sometimes do.

The patient was first seen when he was about five or six hours old, and was found to be a healthy-looking child, with the exception of a large tumor over the spine at the lumbosacral junction, and a most remarkable absence of bone in the composition of the cranium, the anterior and posterior fontanelles being very large, and the sutures plainly demonstrable.

Noting that the child kicked in a lively manner, which was taken as a criterion favorable to treatment, the parents were advised of possibilities and an operation recommended. They consented, and Mayo-Robson's operation was decided upon. Delay was deemed advisable, that the child might become accustomed to being outside the uterus, so we did not operate until he was seven weeks old.

The tumor was pedunculated, round, tense, slightly flattened, slightly transparent, and fluctuated. It was $1\frac{3}{4}$ inches in circumference at the largest part, and was covered by thin skin. There was a peculiar, reddish, crusty spot, about the size of a half-dollar, near the fundus of the tumor, from the center of which leaked a few drops of serum. Continuous pressure would cause the growth to relax, and would produce stupor of the child.

We made injections of a two-per-cent. solution of cocaine about every half inch around the base of the tumor, on one side of the spine, then, making an incision, we worked a grooved director along and divided the integument. A copper uterine sound was pushed between the sac and the skin, and bent from one angle of the incision out at the other. Looping on a ligature, it was drawn around the tumor and tied. A cannula was now introduced, and and about half the fluid allowed to flow out. We found it very difficult to separate the flap from the sac, and the child began to show symptoms of shock. Dr. Davis advised and gave a hypodermic injection of diluted whisky. After the patient revived we finished separating the adhesions and laid open the sac.

I now discovered that I had failed to draw the ligature sufficiently tight to constrict the pedicle, and that a cord-like process, about three lines in diameter, came through the aperture in the spinal column and attached itself to the reddish spot above mentioned. This was later found to be a bundle of nerves, vessels, and connective tissue. Another ligature was placed on the pedicle and tied, after which the sac and cord were cut away. Almost at once the ligature slipped and a hemorrhage occurred from the stump of the cord, which was controlled by pressure with the finger. The bony ring was $\frac{3}{4}$ -inch in diameter. Thanks to my assistant the spinal fluid did not pour out. The sac was brought together transversely with a continuous silk suture. The periosteum should have now been grafted, but the patient being again in a condition of shock, we thought best to at once close the wound. The flap reached well around the internal wound.

Dr. Davis suggested that it would not be well for the child to nurse from his mother's breast because of her undue excitement, so a neighbor kindly consented to act as wet-nurse.

There is only one point in the dressing which should be mentioned, *viz.*, an improvised truss, consisting of a disk of

lead about two inches in diameter, backed with a ball of cotton, and a pad of the same material in front. Four days after the operation the dressing was changed and the wound was found to be doing well. By the eighth day two-thirds of the wound had healed; and at this time the external stitches were removed. The temperature was not at any time over 101.5° F.

The patient continued to do well about four weeks, when a fistulous opening formed and the internal suture made its way out. The use of the truss was continued until about three months ago, when the bones were seemingly in such close proximity as to make its use no longer necessary.

In May, 1897, the child had hydrocephalus. For this the usual treatment was instituted. The circumference of the head was 20 1/4 inches.

The patient was recently again seen, and at this time, the last visit, the vertebra seemed to have approximated. The circumference of the head (with long hair) was twenty-one inches. The anterior fontanel still remained large. The patient does not use his left leg as well as the right.

A. DAN MORGAN, M.D.

WITT'S MILLS, AIKEN COUNTY, S. C.

MARCH 22, 1898.

OUR BERLIN LETTER.

[From our Special Correspondent.]

AN EDITOR IN CRIMINAL ANTHROPOLOGY PROVES TO BE A SWINDLER — DRUNKENNESS, UNCONSCIOUSNESS FROM OTHER CAUSES, AND IMPRISONMENT—SPRAINED ANKLES UNDER ROENTGEN-RAYS —CYCLOTHERAPY AND THE BICYCLE IN SURGICAL THERAPEUTICS.

BERLIN, April 14, 1898.

GERMAN medical men are having a quiet laugh at a novel bit of practical experience which some distinguished experts in criminology have had, the details of which are just coming to light in the course of the trial of a swindler. About a year ago a new medical journal was started here, the publisher being a well-known Leipzig medical publishing-house, with the title *Journal of Criminal Anthropology, of Prostitution, and of the Prison Question*. The names of some distinguished German and foreign, notably Italian, criminal anthropologists appeared among the co-editors. The editor had never been heard of before; however, this did not count for much as editors are sometimes obscure, overworked beings about whom few people bother their heads. The "journal" apparently successfully reached the end of its first year, and in several prominent journals of neurology and mental diseases there appeared complimentary comments on the publication in question, and congratulations on the fact that at last Germany, which has not accomplished much in the field of criminology, had an organ of its own for the expression of its opinion on these subjects.

Then there was a period of silence for awhile, followed by the arrest of the editor, who proved to be a swindler well known to the police, and who had been imprisoned for swindling some four times during the past fifteen years. This time he masqueraded under the title of a Doctor of

Philosophy, and he would seem to have been in a better position to know practically the ground facts in criminology and the "ins and outs" of the prison question even more thoroughly than his contributors, though some of them were very distinguished criminologists.

His exposure came as a result of an attempt to transfer the publication of the magazine to another publisher, and it is the publishers who are prosecuting. Just how much the distinguished criminologists have paid for their bit of practical experience in criminology is not known. The ex-editor is evidently an illustration of the proneness of genius to perversion—a principle upon which modern criminal anthropologists have been insisting. A brochure from the defendant and the plaintiffs in the case would, it is thought, make interesting reading, and throw some new light on certain problems in social criminology, which the incomplete observations of interested parties on the American genus—the bunco-steerer (*habitat*, United States)—have unfortunately left obscure.

The lesson of the case for the medical public would seem to be the ease with which a new and pretentious journal may be started, find a publisher and co-editors without any responsible sponsors, and this without the formality of an introduction. In the flood of matter issuing from the press little heed is paid, even in supposedly scientific matters, to the scientific value, or authenticity of the material. The only question, in many cases, seems to be: "Will it sell?"

Three arrests of persons in coma, with the detention of the individuals over night in prison because drunkenness was suspected, have taken place during the winter in Berlin, and have led to some vigorous protests on the part of medical men. As practically all Germans take some alcoholic liquor with their meals, vomiting in case of unconsciousness is always accompanied with some alcoholic odor, and easily awakens the unfounded suspicion of intoxication. In one case, a short time ago, the detention in a cell over night, without medical care, of a young man whose unconsciousness came on suddenly as a result of epidemic cerebrospinal meningitis, would seem to have been an important factor in the fatal termination of the case.

Lively protestations were made at a recent meeting of the Berlin Society for Internal Medicine against detention in prison of persons in coma, and the opinion was practically unanimous that "in no case of unconsciousness should the judgment of the cause of the state be left to non-medical police officials and prison wardens." The condition of affairs which lead up to these protests, which here are to have some effect as the police authorities have already taken cognizance of them, practically exists all over and some remedy must be found in the interests of true humanity. In the meantime, what is "everybody's business is no one's business" and until some philanthropist specially devotes his attention to the subject the abuse is likely to continue.

Most doctors have had experience with troublesome sprains of the ankle, painful and inconvenient for the patient at the moment and with tendencies to recur which no care seems to be able to prevent. A German army-

surgeon who has had the bothersome treatment of a number of such cases in the young soldiers of the infantry regiments, has found that they are not simple sprains. He has been taking Röntgen-ray photographs in every case, and has found that in nearly all some complication like fracture or dislocation of the little bones of the ankle was present.

The number of cases in which a simple rupture of ligament or capsule of the joint was the cause of the trouble, and in which, therefore, the Röntgen-rays would show the presence of no bony lesion or at most a pushing of the bones apart by the collection of fluid in the intra-articular spaces, was extremely small, while the number of fractures of little bones was very large, forming the real lesion in the majority of the cases.

He suggests that the only rational treatment is fixation of the foot in plaster, as for fracture, and the careful examination with the X-rays for a break. Otherwise false joints, bony overgrowths from irritation give rise to a condition which easily leads to recurrence of the symptoms whenever the slightest strain is put upon the foot. Besides, the breaking of one of these small bones and its delayed or incomplete union, make a point of "least resistance" of the most delicate kind. The chronic inflammatory condition makes it an especially favorable culture-medium for the bacillus tuberculosis, which does not take hold easily where there is rapid metabolism of healthy tissues; hence, the large number of cases of tuberculous arthritis of the ankle—a frequent sequel when there is the history of an old sprain.

Some modifications of bicycle frames, of the length of pedals, and of gears, so as to adapt the bicycle to therapeutic purposes, were exhibited at the Verein für Innere Medizin at its April meeting, and attracted a good deal of attention. Some of them were models that had actually been employed in surgical therapeutics in the treatment of ankyloses of various joints. Patients in whom gonorrheal and septic arthritis had left practically complete ankyloses and who had gradually acquired the power to bend their limbs again by the exercise on the bicycle, were also exhibited. The pedals may be so arranged and the gear so fixed as to use only the limited movement possible for a particular patient. The practical application of certain physical principles takes the new methods out of the realm of mere empiricism and gives the surgeon a very pleasant and efficient way of encouraging his patient to that use of the limb which obviates contractures.

TRANSACTIONS OF FOREIGN SOCIETIES. Paris.

ARTHROTOMY FOR IRREDUCIBLE DISLOCATION OF THE SHOULDER—TREATMENT OF ABSCESS OF THE LIVER—GASTRECTOMY AND GASTROTOMY—THE PREVENTIVE AND VACCINATIVE POWERS OF ANTIVENOMOUS SERUM—INFECTION FAVORED BY DISABILITY OF THE KIDNEYS—THE USE OF BLISTERS IN PULMONARY TUBERCULOSIS—LOCAL APPLICATION OF SALICYLATE OF METHYL IN RHEUMATISM—VOMITING OF PREGNANCY RELIEVED BY OXYGENATED WATER.

At the Surgical Society, March 2d, RICARD said

that arthrotomy is the preferable treatment in recent irreducible dislocations of the shoulder, for in such cases there is always an interposition of tendon ligament or some other tissue which prevents the return of the head of the bone to its socket. An incision is less dangerous in such cases than violent attempts at reduction. If the dislocation is of several weeks' duration it is justifiable to make several quick turns of the head of the bone, combined with traction, in order to break up adhesions and to replace the bone in its capsule. If such movements are unsuccessful arthrotomy is indicated.

LUCAS-CHAMPIONNIERE spoke of the good results which follow resection, though it was his opinion that old dislocations with a fair amount of motion had better not be disturbed. If operation is undertaken, and it is found impossible to replace the head of the humerus in its socket, resection should be performed.

WALTHER, at the session of March 16th, discussed the subject of "Abscess of the Liver," pointing out the delicacy of a differential diagnosis between this affection and typhoid and malarial fevers. Exploratory puncture is a valuable aid to diagnosis. Loison reported the results of operation upon fourteen patients with abscess of the liver. Eight of them recovered. In eleven cases the transpleural route was chosen. In the other three, laparotomy was performed. A bacteriologic examination of the pus showed it to be sterile in three instances, while in three others it contained staphylococcus aureus, once a mixture of streptococcus and coli bacillus and once a mixture of coli bacillus and a diplococcus.

ROBERT said that exploratory puncture with him had become a routine practice, to be immediately followed by an incision if pus were found.

MONPROFIT removed a large tumor from the abdomen, including about one-third of the stomach wall. Finding it impossible to suture together the remaining portions of the stomach without too much strain upon the sutures, he divided the jejunum and performed post-colic gastroenterostomy in the form of a Y, stitching the upper cut end of the jejunum into the side of the lower portion. No buttons or other artificial aids were used. The patient was two hours under chloroform and recovered without severe symptoms. Monprofit expressed himself as heartily in favor of gastrectomy when the tumor is accessible.

PHISALIX addressed the Biological Society, March 5th, upon the "Preventive and Vaccinative Powers of Antivenomous Serum." He had learned from experiments that these two properties are distinct. The vaccinative reaction is sufficient to protect the organism, but is not strong enough to generate in the animal antitoxic substances which will render other animals immune. There are, therefore, two different degrees of immunization. In the first case, we have simple vaccination, in the second case hypervaccination.

RICHE said that he had been able to clinically verify a fact that is well known from experiments upon animals, *vis.*, that interference with the action of the kidneys favors infection. A light epidemic of measles broke out in an infants' hospital. The only adult who contracted the disease was a woman who three months before had

passed through a severe attack of nephritis with uremic symptoms requiring blood-letting. She had previously had measles. Notwithstanding this fact she contracted the disease again and in a very serious form, associated with pulmonary edema requiring the withdrawal of thirteen ounces (400 grams) of blood. Convalescence was slow.

CHARRIN called attention to the fact that while certain forms of nephritis favor infection there are other forms in which just the opposite condition seems true, at least to infection with particular kinds of virus. In the case referred to, the weakened condition of the patient favored contraction of the disease and also favored the production of pulmonary edema. At no time during the illness was the toxicity of the patient's blood-serum much increased, nor was there much retention of urinary products in the system. The methyl-blue test showed the kidneys to be normally permeable, although, of course, portions of these organs might have been diseased.

At the Academy of Medicine, March 15th, VALLIN spoke of the "Indications for the Use of Blisters in Pulmonary Tuberculosis." They ought not to be employed if the disease is advancing very rapidly, or if there is a high fever and hemoptysis, or extensive tuberculous bronchopneumonia. On the other hand they are of great service in slowly progressing cases with a limited area of pleural, pulmonary, or bronchial congestion, and a temperature not exceeding 38.5° C. (101.3° F.) In such cases the application of a small blister, repeated three or four times, gives an excellence result. It also affords relief in cases of bronchopneumonia limited to a small area, without hemoptysis and with fever ranging from 39° to 40° C. (102° to 104° F.) Before prescribing blisters the afternoon urine should be examined, as the urine of a phthisical patient rarely contains albumin in the morning. Blisters should never be prescribed for old people.

At the session of March 22d, LINossier spoke of the good results to be obtained by local application of salicylate of methyl in the treatment of rheumatism. Certain authors have mixed the drug with vaselin and applied it in the form of a salve, but when applied in this way it is far less efficacious, only one-half the amount being recoverable in the urine that is recoverable when the pure drug is applied. In either case it must be covered with some imperious material or it will not be absorbed at all.

GALLOIS addressed the Therapeutic Society, March 9th, upon "The Use of Oxygenated Water in the Vomiting of Pregnancy." He had only two failures to record. This treatment is without effect in vomiting due to gastric diseases, but it appears to be efficacious in the vomiting of consumptives. The mode of its action is not determined; perhaps it is a mechanical one, due to the presence in the stomach of the liberated gas; perhaps the oxygen in some way affects the digestive processes, and, perhaps it counteracts the influence of some ptomain.

Vienna.

PROLONGED USE OF ARSENIC FOLLOWED BY THE DEVELOPMENT OF ULCERS AND EPITHELIOMA—RELIEF OF PES EQUINUS BY A PLASTIC OPERATION UPON THE ACHILLES TENDON.

At the Imperio-Royal Society of Physicians, Feb. 25th, ULLMANN showed a patient, thirty-four years old, with keratosis and epithelial carcinomata from the prolonged use of arsenic. At the age of fifteen the patient had suffered from acne, and she took arsenic internally during seven consecutive years. In the course of time the palmar surfaces of the hands and feet and the skin of her face began to burn and smart. The skin became thick, uneven, and pebbly, and was darkly pigmented in spots; moreover, there was well-marked local hyperidrosis. The arsenic was discontinued and all symptoms disappeared except a certain amount of tenseness and a disposition to the formation of slowly healing ulcers. Some years later there appeared on her forehead a brownish-red spot, which was excised. It proved to be a non-ulcerating, sub-epidermoidal carcinoma. An ulcer upon the heel which resisted treatment a long time finally developed a tumor which was found to be an epithelioma with a tendency to cornification.

HEBRA said that he had once taken arsenic three months on account of an influenza-neuralgia, and that the soles of his feet became thickened and so painful that walking was impossible. The symptoms disappeared two or three weeks after the use of the drug was discontinued. There was no hyperidrosis.

At the session of March 11th, FRANK showed an adult patient upon whom he performed a plastic operation to lengthen the Achilles tendon and relieve the deformity of pes equinus produced by an osteomyelitis. An incision two and a half inches long was made on the inner side of the tendon and the latter was obliquely divided throughout the whole length of the skin incision. The ends of the tendon were sutured and the foot was placed in plaster of Paris in a corrected position. Within fourteen days exercises were begun, and in five weeks the patient could walk without a bandage. This operation permits the earlier use of gymnastic exercises and facilitates recovery. Recurrence of the difficulty is not to be feared. It is therefore preferable to subcutaneous tenotomy.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held March 8, 1898.

THE President, B. SACHS, M.D., in the Chair.

DR. WILLIAM HIRSCH presented a baby, aged fifteen months, who had been referred to him about one week ago because of certain movements of the head. The child had been perfectly healthy up to about two months previously, when it had fallen from a chair and struck the back of the head. Vomiting set in immediately afterward, and continued about a week. The mother then noticed the peculiar shaking of the head, which has continued ever since. Examination of the nervous system is absolutely negative. On examining the eyes one observes that there is a nearly absolute unilateral nystagmus. There is a horizontal nystagmus of the left eye, while the right eye shows the same condition, though very much less marked. The speaker said that it has been claimed

by some that these movements in children are brought about by an effort at compensation for the nystagmus. A point in favor of this theory is that the movements cease during sleep. Others have claimed that the movements of the head and the nystagmus have a common cause, *e.g.*, a cerebellar lesion. None of the reported cases shows the difference existing in the two eyes in this case.

DR. W. M. LESZYNSKY said that he had seen quite a number of these cases. A great many of them had been found to also present ocular defects. In this case, the injury was probably only a coincidence. When the child gets old enough to fix the eyes these movements are prone to occur. Some years ago he had seen such a case at the Manhattan Eye and Ear Hospital. It was thought that the child was blind and had optic atrophy. He had kept the little patient under his observation seven or eight months, and improvement and ultimate recovery followed the application of tonic treatment. He did not believe, therefore, that there is any actual morbid anatomy in these cases.

DR. GEORGE W. JACOBY said that he had not found these cases uncommon, and he believed that they occur directly as a consequence of traumatism. There are two distinct classes of cases, *viz.*, those in which there is nystagmus, and those in which it is absent. In the majority of cases, by excluding vision, it would be found that the movements of the eyes cease. In this child there seemed to him to be some up-and-down movement complicating the other movements. Some years ago he had seen an interesting medico-legal case, occurring in an adult, a man who had been struck in the eye by an electric light wire. The eye had been perforated. After losing the eyeball he presented certain psychic symptoms, together with some head-nodding which had continued ever since. He was now rather feeble-minded. Inasmuch as in this man there was nothing pointing to injury of any other part of the brain except the frontal lobe, the question arose as to whether there was any possible connection between injury to this lobe and the movements.

DR. FREDERICK PETERSON said he believed Henoch first described these movements many years ago. He had himself described ten cases some years ago, representing all the different varieties. Most of the cases have a lateral movement, but some have the head-nodding. Henoch thought the condition was reflex from dentition, as the majority of the cases developed at about the age of eight or ten months. The theory which he had adopted is that these cases are almost always the result of a trauma or concussion. A point worthy of note is that there cannot be any marked pathologic lesion, as there is recovery in all such cases. The lateral movement of the head and the movement of the eyes seemed to him to be due to functional troubles in different parts of the brain. Many of these patients will temporarily stop the movement if the eyes are fixed upon an object. If the lateral movements are due to a nystagmus, it is curious that the nystagmus should be complicated by the head-nodding.

DR. MARY PUTNAM-JACOBI said that many years ago she had seen a case coming on spontaneously in a child

two years old. It was peculiar in that a rotary movement occurred every night at bedtime.

DR. FRAENKEL said that he had recently seen a child nine months old, who, according to the mother, had exhibited a rotary movement of the head and a vertical nystagmus since it was three months old. This nystagmus occurred when the nodding movements ceased. This would seem to support the view of Dr. Leszynsky that it is dependent upon some refractive condition of the eye.

DR. HIRSCH said that the objective examination by Dr. Koller showed the eyes to be entirely normal. All the theories offered would not hold good in a case of unilateral nystagmus. That the condition in the present instance was caused by traumatism alone seemed almost certain from the history. The movements of the head are entirely separate from those of the eyeball. The fact that most of the children recover is sufficient to exclude an organic lesion, though slight pachymeningitis in the region of the cerebellum might result in resolution.

DR. FRAENKEL presented a child, two and a half years old, born of healthy parents. The family history was negative. The child was born at full term, the breech presenting. The labor was rather difficult. Immediately after birth the abnormal condition of the lower extremities was noted. The mother insists that the child has improved. Examination shows a moderate lateral curvature, and the child is unable to sit, walk, or stand. Electric examination shows extensive degeneration of all the muscles except those of the calves. The knee-jerks are absent, but there is an ankle-clonus on both sides. At first sight, the case seemed to be one of poliomyelitis, but it is conceivable that the condition is the result of a dropsy, or of a hemorrhage from rupture of the anterior spinal artery. As this vessel almost exclusively supplies the anterior horn, it is possible that a traumatic poliomyelitis had developed, extending from the mid-dorsal to about the third lumbar segment; further, there might be a localized cavity formation. He explained the existence of the ankle-clonus by the theory that, as the calf-muscles are in a state of increased tonus due to the fact that the antagonistic muscles are absent, the moment a sensory stimulus is applied and enters the cord, the latter being in a state of increased receptivity, the evidence of its having received this stimulus is shown by an additional motor discharge. The spinal curvature is to be explained by the unilateral involvement of the spinal muscles. The posterior muscles below the knee give an exaggerated response to both electric currents, while there is no reaction in the muscles above the knee.

DR. PETERSON asked why this explanation of the ankle-clonus would not apply to all other cases of poliomyelitis in which, it is well known, there is no ankle-clonus.

DR. FRAENKEL replied that the presence or absence of ankle-clonus is dependent upon quantitative changes in the tonus of the muscles. The increased tonus of the calf-muscles he did not think ordinarily existed in cases of poliomyelitis.

DR. JOSEPH COLLINS accepted the pathologic explanation given by Dr. Fränkel. The fact that ankle-clonus does not occur in ordinary cases of anterior poliomyelitis

does not negative the explanation given. This case is, in reality, a unique substantiation of the theory proposed by Dr. Fränkel last winter, and adopted by Hughlings Jackson in his lecture this year. In no case of complete anterior poliomyelitis which he had seen had there been any hypertonus of the calf-muscles.

DR. B. SACHS thought there is at least one other view to be put forward. He did not think that there is this amount of spasticity in a very large number of cases of ordinary poliomyelitis. He had seen a single instance of ankle-clonus in an ordinary case of poliomyelitis; the unusual spastic condition in the present case must be due to some special lesion. It is fair to assume that in this case there is some developmental defect. The entire appearance of the leg reminded him very much of cases in which children had been born with defective limbs. On the supposition that the gray matter in the spinal cord is defective, chiefly in the region of the lumbar segments and in the lateral columns, one can understand how the knee-jerks might be absent and the ankle-clonus present.

DR. JOSEPH COLLINS presented a boy, thirteen years of age, with lateral curvature of the spine, atrophy of the muscles of the right upper extremity, and the condition of the face known as the Schultze eye, and a history of attacks of diarrhea which had no apparent relationship to ingesta or indigestion. The symptoms were of two- or three-years' duration and had slowly developed. He regarded the case as one of syringomyelia, despite the fact that there are no sensory disturbances. The lesion chiefly involves the anterior horns and the group of cells adjacent to Clarke's column, which have been shown in an investigation recently made by Dr. Onuf and himself to stand in developmental and functional relationship to the sympathetic.

DR. G. W. JACOBY said that to base the diagnosis on these three symptoms alone required considerable assurance. In his opinion, such a diagnosis is not warranted unless there are marked sensory disturbances accompanying the atrophy.

DR. WILLIAM HIRSCH said that he had recently shown two cases of syringomyelia in another society, which showed the same condition of the muscles and of the eye—the narrowing of the fissure of the eyelid and the contraction of one pupil. There were also present the typical sensory symptoms, but the atrophy of the ulnar group and the condition of the eye had led him to believe that it was a typical form of syringomyelia located between the last cervical and first dorsal segment. He had also recently seen in private practice a lady with the same condition of the eye, and with a herpes zoster in the trigeminal region, and who also showed, instead of an atrophy, a tremor of the left arm and a slight analgesia. The diagnosis made by Dr. Collins seemed to him perfectly justifiable. The more characteristic symptoms will probably develop later.

DR. L. STIEGLITZ concurred in the diagnosis of syringomyelia, and remarked that at the last meeting he had presented a counterpart of this case, in which no sensory symptoms were present, and also a typical case of syringo-

myelia. He thought it was not uncommon to find these cases without sensory symptoms.

DR. ONUF said that in a joint investigation, made by Dr. Collins and himself, they had found that the zone situated between the central ganglia on one side and the end of the lateral horn on the other, and between the base of the posterior and anterior horns, is intimately connected with sympathetic functions. They had found that atrophy of the cells of the lateral horn occurred in a certain group (the lateral, the central ganglia, and in the whole zone between), and that this atrophy was partly due to sensory and partly to motor fibers. The motor-fibers originate from the smaller cells of the zone mentioned. This being the case, it is evident that syringomyelia could present very different pictures, depending upon the particular locality affected. In the case under discussion the sympathetic symptoms are very marked in connection with the eye, and the diarrhea and the lateral curvature may also be considered as belonging to the same class. In three instances they had extirpated the stellate ganglion in cats. This was usually followed after some weeks by a diarrhea which was most persistent and exhausting. This ganglion is supplied chiefly by the upper dorsal nerves.

DR. M. ALLEN STARR said that the combination of the sympathetic paralysis with ulnar-nerve paralysis he had known to occur in one case of undoubted gumma on the anterior surface of the cord. The gumma was absorbed after a time. The condition had been undoubtedly produced by pressure on the anterior nerve roots.

DR. COLLINS said that he had been largely led to make the diagnosis of syringomyelia in this case by the experiments that he had conducted in conjunction with Dr. Onuf. There was nothing else which would produce the four prominent symptoms, *viz.*: the diarrhea, curvature of the spine, atrophy of the hand muscles, and the Schultze eye.

DR. HIRSCH presented a young woman who was an example of total unilateral congenital sweating of the face. She complained that half of the face would become red and moist while the left half remained dry and of normal color. She never sweats on the left side of the face. He had experimented with hypodermic injections of different drugs. Physostigmin had had no effect at all. Pilocarpin, injected hypodermically, caused perspiration all over her face, for the first time in her life, but, of course, this was only transient. The fact that in this case absence of perspiration is associated with vasomotor symptoms seemed to be in favor of the view that the vasomotor-centers and the sweat-centers are at least intimately connected. The condition is confined to the face.

DR. STARR remarked that a case of this kind, occurring in a man twenty-three years of age, had been entirely cured in his clinic by boring out the turbinated bones.

DR. FRAENKEL presented a young boy, who had come under his observation about three months previously, with a diagnosis of pulmonary tuberculosis, because of an attack of hemoptysis. He had been well up to two years before; then he began to suffer from

shortness of breath. On admission to the Montefiore Home, the head was turned to one side, there was inspiratory stridor, a moderate amount of exophthalmos, swelling of the neck, and tachycardia. The physical examination of the chest was practically negative. The tumefaction in the neck was lobulated and moved up and down during deglutition. Under treatment with thyroid extract he had decidedly improved subjectively, and had gained fourteen pounds in body weight. The tachycardia had disappeared. The case was interesting as showing the difference between genuine Basedow's disease and the secondary or symptomatic form.

DR. C. E. NAMMACK asked if Hodgkin's disease had been excluded.

DR. FRAENKEL replied that a brother of this patient had twice had tuberculous glands removed, and there had been good reason to believe that this might be a case of Hodgkin's disease, but it had been excluded: (1) by the absence of other evidence of lymphatic involvement; (2) by its long duration; (3) by examination of the blood; and (4) by the mobility of the swelling in the neck on deglutition, showing its connection with the thyroid gland.

DR. B. SACHS presented a man, fifty-one years of age, whom he had first seen about one week before. The patient had been married twenty-seven years. Six years ago his first wife had been afflicted with the same affection as the one from which he now suffers. The patient himself had been in good health in former years, and he still weighs 230 pounds. He had been an extremely heavy drinker, chiefly of beer, taking at times as much as fifty or sixty glasses daily. Syphilitic infection could not be determined. He had been in good health up to January 12, 1898, when, while attending the funeral of a friend, he says he saw a flash of light, and this was immediately followed by double vision and intense photophobia. At first glance, there is apparently a double ptosis, but the eyelids can be moved upward. Ordinarily they droop in an effort to protect the eyes. There is slight nystagmus and a decided paresis of the left rectus externus muscle. The pupils are irregular; they do not react to light, and but slightly to accommodation. The case had been referred to him by Dr. Marple, who had found nothing, on ocular examination, to explain the photophobia. Further examination showed a very widespread and marked hemi-analgesia, but no impairment of tactile sensibility. He had arrived at the conclusion that there is a large hysteric element in the case. The visual fields are normal, the reflexes are normal, and there is no evidence of loss of power in the extremities. His diagnosis was hysteric ophthalmoplegia.

DR. FRAENKEL said that in a recent monograph hysteric ophthalmoplegias of this character had been described. Aside from the clinical aspect of the case, its development after emotional disturbance is particularly significant. About six months ago a man, in very similar condition, had applied for admission to the Montefiore Home. He presented ataxia, loss of knee-jerks, ptosis, and ophthalmoplegia. After admission, his ptosis and ophthalmoplegia disappeared, and the case clearly proved

to be one of locomotor ataxia, the other symptoms having been hysteric, and added to the ataxic symptoms with a view to securing admission to the hospital.

DR. LESZYNSKY said it is important to distinguish between ptosis and blepharospasm. In the case under discussion there seems to be a certain amount of blepharospasm. With photophobia, tonic blepharospasm is much more likely to occur than ptosis. He had seen a number of such cases in hysteric individuals, and quite recently one in a young girl who responded promptly to hypnosis.

DR. SACHS then presented another case of ophthalmoplegia, in a boy seventeen years old. In October, 1894, at 9 A.M., the patient had found himself unable to utter words. This had passed away, but had been repeated at noon and at 4 P.M. the same day. He then had a convulsion, lasting ten minutes, after which the left eyelid had been noticed to droop. There had been no convulsions since then. He had been perfectly well previously. Examination showed complete ptosis of the left and slight ptosis of the right eye. The outward and inward movements were limited in single and conjugate action; both pupils reacted well to light and accommodation; the sensation of the face was normal. There had been comparatively little change in the past three years. There is now diplopia, chiefly when looking to the left. The diagnosis lay between thrombosis or embolism in the basilar artery. The heart action is irregular and rather rapid, but no murmur is audible.

DR. SACHS also presented a man, thirty-nine years of age, who had been admitted to the Montefiore Home some time ago. There was no evidence of syphilis. At the age of twenty he was weak in the knees and frequently made missteps. In 1887 he had sought medical advice because of difficulty of locomotion, noticed especially in climbing stairs. When examined in March, 1895, he complained chiefly of difficulty in walking, weakness in the extremities, and slight difficulty in speech. At first, the case was supposed to be one of locomotor ataxia. He now has an ataxic spastic gait, and also has static ataxia; the pupils react to light and for accommodation; the patellar reflexes are absent. There is no Argyll-Robertson pupil. There is distinct ataxia of the right upper extremity. He has a form of speech which is between a slow speech and a bulbar speech. The diagnosis lies between a bulbar form of multiple sclerosis and the possibility of a Friedreich's ataxia instead of an ordinary tabes. The great point against the latter is its occurrence rather late in life. There is no disturbance of sensation. The jaw-jerk is absent.

DR. FRAENKEL said that although the lack of coordination was first noticed when the patient was nineteen years of age, when his attention was naturally directed to it by entering the army, it was not improbable that it had been present long before. There was also slight atrophy of the optic nerves. The absence of sexual and sphincteric disturbance, and the peculiar thick and scanning speech seemed to point rather to the diagnosis of multiple sclerosis.

DR. COLLINS said that when he had first seen the

man, three years ago, the intention-tremor and the optic atrophy had not been present, and it was then thought that the man had Friedreich's disease. In the last two years the speech had become very much more bulbar in quality. He was inclined to believe that there was a diffuse insular sclerosis, bulbar and spinal.

DR. HIRSCH said that even at the present time there is not a perfect agreement as to what constitutes the pathologic basis of Friedreich's disease. The case seemed to him like the *spinal* form of Friedreich's disease.

DR. SACHS said that the term "Friedreich's disease" is at the present time usually applied to the ordinary hereditary ataxia, the disease located partly in the posterior, and partly in the lateral columns of the cord.

REVIEWS.

THE PRINCIPLES OF BACTERIOLOGY. A Practical Manual for Students and Physicians. By A. C. ABBOTT, M.D., Professor of Hygiene, University of Pennsylvania. Fourth edition, enlarged and thoroughly revised. Philadelphia and New York: Lea Brothers & Co., 1897.

A GOOD proof of the value of this book and the demand for it lies in the fact that the fourth edition has been reached within six years. Since the publication of the last edition some important advances in bacteriology have been made, and we find them fairly well reflected in the present revision.

We are more than surprised, however, to find that the bacillus of syphilis is still mentioned as one of the bacilli likely to be confounded with the bacillus of tuberculosis, and the differential points in the technic of staining are mentioned to guard against errors, but the author fortunately states later on that in the examination of sputum and pathologic fluids the syphilis bacillus will most likely not be encountered. We feel assured that on this point most observers will agree at the present time. We are pleased to note that in discussing the differential features between the typhoid bacillus and the bacillus coli commune the author lays stress on the characteristic reaction of the former when serum from a typhoid-fever case is added (Widal). Heretofore the diagnosis between these organisms has always been a source of much anxiety and annoyance.

The book has been so often reviewed and so much said in its favor that we must be pardoned if we content ourselves by simply adding that it still holds its own with any of the manuals on the subject and that it is deserving of the highest praise. A more extended index would, however, be much appreciated by the student. The book is well bound and printed, and several new illustrations have been added.

A MANUAL OF MEDICAL JURISPRUDENCE. By ALFRED SWAINE TAYLOR, M.D., F.R.S. Revised and edited by THOMAS STEVENSON, M.D., London, Fellow of the Royal College of Physicians of London, etc. Twelfth American, edited, with citations and additions

from the Twelfth English, Edition. By CLARK BELL, Esq., of the New York Bar. New York and Philadelphia: Lea Brothers & Co., 1897.

THIS work follows the same general plan as did the eleventh edition, which was published some five years ago. Some of the sections have been extended and revised, notably the chapter on the examination of blood-stains. This chapter includes the valuable tables of measurement of blood-corpuscles by the late Dr. Treadwell of Boston and Professor M. C. White of New Haven, together with light plates from photomicrographs of human and other red blood-corpuscles in various grades of amplification. The entire question of blood-stains in its medico-legal bearing is of such vital importance that each contribution to this subject is of the greatest value to every microscopist.

In the chapter on death from electricity the autopsy notes in the cases of four criminals executed by electricity are given. So many observations in fatal cases of sun-stroke have been made in the past two years that the chapter on this subject should have been revised. Hypnotism in its medico-legal bearings does not receive the consideration which its importance demands.

The book contains a vast amount of valuable information, and its shortcomings are few. For physicians, lawyers, and teachers of forensic medicine the work is admirably suited, and the highest credit is due to the editor and the publishers.

SPINAL CARIES (SPONDYLITIS OR POTTS' DISEASE OF THE SPINAL COLUMN). By NOBLE SMITH, F.R.C.S. Ed., L.R.C.P., London. Second edition. London: Smith, Elder & Co.

IN this monograph of 150 pages the author desires to confirm the conclusion expressed in a former edition that spinal caries is generally a curable disease, but that success in treatment depends, above all things, upon accurate support of the spine.

An account of the pathology and symptomatology of the disease, together with its differential diagnosis, is presented. The various types of deformity are demonstrated by numerous outline drawings, and the phases and peculiarities in the course of the disease as interpreted by different physicians are exemplified by the citation of cases from hospital records and from medical journals at somewhat tedious length.

An account of cases in the author's practice fills twenty pages of the book. Some of these are of interest as showing the course or outcome of the disease and others are quoted to prove the superiority of the "adjustable splint" as a means of treatment contrasted with the plaster jacket, which had been previously applied at other institutions.

The brace used by the author and the method of adjustment are practically identical with the original appliance of Taylor, which was described by him in 1863.

The book presents nothing new, either in form or substance, unless it be the practice of boring into the spinal processes to relieve local pain, on the theory that it is due to tension, the result of the disease of the adjoining vertebral bodies.

The principles and the details of treatment are, however, presented in a satisfactory manner, and if, as the author hopes, it may serve to impress upon the surgeon the importance of personal attention to the proper adjustment of support in contrast with the practice of leaving such details in the hands of mechanics, its publication will have been justified.

THE EYE AS AN AID IN GENERAL DIAGNOSIS. A Hand-book for the Use of Students and General Practitioners. By E. H. LINNELL, M.D. Philadelphia: The Edwards & Docker Co., 1897.

The author has given us a valuable compendium, well arranged, clearly written, and exact. After a short chapter on the general eye symptoms of nervous and constitutional disease, the affections of the individual structures of the eye and of its appendages are discussed successively. The chapter on the field of visions and the visual disorders due to lesions implicating the intracranial course of the optic-nerve fibers is particularly thorough, while necessarily brief. There are special divisions on "Reflex Neuroses," on "Ocular Affections of Toxic Origin," "Toxic Amblyopia," and, finally, a most important summary of the ocular symptoms attending and following general anesthesia. The work is printed in large, clear type on excellent paper. Unfortunately, its appearance is marred by numerous typographic errors. "Myosis" is a spelling which should no longer appear in scientific works. It has no philologic relationship to "myopia," and should be "miosis," or, better, "meiosis."

"**THE EDINBURGH MEDICAL JOURNAL**," Edited by G. A. GIBSON, M.D., F.R.C.P., Ed. New Series. Vol I. Edinburgh and London: Young J. Pentland, 1897.

If every succeeding volume in the new series of this famous journal equals in interest the present one, it will undoubtedly have its full share of public recognition. The bound volume before us contains numerous articles of scientific interest written by men eminent in medicine. There are lengthy book reviews, reports of societies, and, in each number, a department of recent advances in medicine. The editing is carefully done, and altogether this volume of the *Edinburgh Medical Journal* is a thoroughly up-to-date, progressive publication.

TWENTIETH CENTURY PRACTICE: AN INTERNATIONAL ENCYCLOPEDIA OF MODERN MEDICAL SCIENCE. By leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D. In Twenty Volumes. Volume XII. *Mental Diseases, Childhood, and Old Age.* New York: Wm. Wood & Co., 1897.

DR. G. F. BLANDFORD of London contributes the article on insanity, and begins by emphasizing the truism that "disorders of the mind mean disorders of the brain, and that the latter is an organ liable to disease and disturbance; like other organs of the body, to be investigated by the same methods and subject to the same laws."

Among the causes of insanity we fail to find even a mention of poisoning by cocain, ergot, tobacco, mercury,

salicylic acid, iodoform, and the bromids; we miss, as well, a description of many other causes of insanity, all of which one would expect to find in an "Encyclopedia of Medical Science." It is much to be regretted that in an article so ably written we should be forced to note these and other omissions. The chapters on the prevention of insanity and on the "Insane and the Law" are, however, very complete and well written.

The section devoted to idiocy comes from the pen of Paul Sollier of Paris, and is as complete and comprehensive an account of the subject, for its size, as we have ever read.

Professor Lombroso contributes a short article on criminal anthropology, written in his usual interesting style.

The causes and symptoms of old age are discussed by Dr. J. Boy-Teissier of Marseilles, while Jules Comby of Paris writes on the diseases of children, exclusive of the infectious diseases and rachitis. The article is concise and comprehensive, but is written as if for medical students instead of for medical practitioners. We regret that the eminent Physician-in-Chief to the Hôpital Trousseau has not contributed more from the great fund of knowledge that we know he possesses.

DISEASES OF THE STOMACH.—Their Special Pathology, Diagnosis, and Treatment, with Sections on Anatomy, Physiology, Analysis of Stomach Contents, Dietetics, Surgery of the Stomach, etc. By JOHN C. HEMMETER, M.B., M.D., Ph.D. Philadelphia: P. Blakiston, Son & Co., 1897.

THIS volume, notwithstanding the avowed purpose of the author to treat his "subject concisely," is expanded into a work of large magnitude. The author either must have lost sight of his purpose or have found that the material at his command exceeded his expectations.

The reviewer takes decided exception to the statement of the author that in this special field of clinical medicine "the names of Austin Flint, Pepper, Osler, and Delafield are as well known as those of Kussmaul, Senator, Nothnagel, Leube, Ewald, and Boas in Germany, or Hager, Bouveret, Debove, and Mathieu in France. No one will detract from the eminence of the American authors mentioned, their fame having been attained by the brilliancy of their work in the general field of clinical medicine; but what work in the special line of gastric diseases, may we ask, has justified the author in placing these names on the same pedestal as Kussmaul, Leube, Ewald, and Boas? Why has the author not added to the latter the name of Riegel of Giessen, whose work on "Die Erkrankungen des Magens" in Nothnagel's system is perhaps one of the best, if not the best, work on the subject of stomach diseases in any language? Professor Riegel has done as much original work in this special field as any of the men abroad who are so specifically indicated by the author.

As to the present work, the reviewer desires to call attention to the fact that if the purpose of the author to be concise were followed, much could be abstracted, much could be condensed, and still the value of the book would not suffer. The book contains, indeed, much of real worth,

and its contents are presented in a very fluent, agreeable, and pleasant style. Part I. deals with the anatomy and physiology of the digestive organs and with the methods and technics employed in diagnosis. Part II. contains the therapy and materia medica of stomach diseases, and could be very well condensed into a much smaller compass without detracting from the dignity and importance of the subject. Part III. is called "The Gastric Clinic," and presents the subject of diseases of the stomach. Even this part will admit of condensation.

A very complete bibliography accompanies the various chapters, and still we miss the names of some American writers on stomach diseases. The author, it is true, correctly states that there are but few American laborers in this field, but mention of some of the few has been neglected. The work deserves careful reading, as it presents its facts clearly, and represents the status of knowledge in this special field up to date.

The book is handsomely printed, reflecting credit upon the publishers.

A HANDBOOK OF MIDWIFERY. By W. R. DAKIN, M.D., B.S. (Lond.), F.R.C.P., Obstetric Physician and Lecturer on Midwifery and Diseases of Women to St. George's Hospital. Illustrated. New York, London, and Bombay: Longman's, Green & Co., 1897.

IN this book the author presents a work intended for students and junior practitioners. He has arranged the subject in two parts—physiology and pathology—each of the elements of pregnancy, labor, and the puerperium being considered in detail in each division. In the first part the development of ovum and decidua and the diagnosis of pregnancy are particularly dwelt upon. We note that the author prefers making a diagnosis of the duration of pregnancy from the instrumental measurement of the fetal ovoid rather than from the height of the fundus uteri. His peculiar terminology, the "lie" of the fetus, refers to the relation of the long axis of the child to that of the mother. He thus distinguishes longitudinal, transverse, cephalic, and pelvic "lies."

The physiology and management of labor are next considered, chloroform being the anesthetic of choice. The physiology of the puerperal period and of the new-born child occupy the succeeding seven chapters. Under the pathology of pregnancy the author recommends induction of labor if an existing albuminuria does not diminish or disappear under appropriate treatment. His treatment of eclampsia consists in emptying the uterus by a preliminary puncture of the membranes, awaiting the advent of pains, and, if these are delayed, the application of the forceps if the child is alive; craniotomy if it is dead. Diaphoretics, cathartics, sedatives, and venesection are the additional measures advocated. The immediate removal of the sac is advised as the only satisfactory (and the author might have added rational) method of dealing with an ectopic gestation. Chapters on the obstetric operations, the pathology of labor, the puerperal period, and the new-born child complete the book. Walther's position, which is advised when it is necessary to increase the conjugate diameter for the use of the forceps in flat or generally contracted pelves, and thrombus vaginæ and hematoma

of the vulva are considered in appendices. The work is a thorough review, and is a safe modern guide for the student and practitioner. It is conservative, as, for example, in the treatment of puerperal septicemia, but it is thoroughly digested and comprehensive. The illustrations are more than usually profuse, and, for the most part are original. The heavy paper and fine typography aid in making this one of the most attractive of recent works on obstetrics.

THERAPEUTIC HINTS.

Iodo-mercurial Treatment of Nephritis.—CAMPBELL BLACK has treated a number of patients having acute or subacute nephritis by the administration of the following mixture. This effected a rapid subsidence of the renal congestion, with the gradual disappearance of the albuminuria and other symptoms:

℞ Hydrarg. chlor. corros.	gr. i-ii
Potass. iodid.	3 iii
Syr. simpl.	℥ i
Inf. gentian.	℥ vii.

M. Sig. A tablespoonful three times daily.

For the Urethritis Caused by Injections of Potassium Permanganate.—The use of large quantities of a solution of this drug in the treatment of gonorrhea frequently causes an irritation of the mucous membrane of the urethra, with the appearance of a thick mucous discharge not containing gonococci. For this condition STERNE recommends the following injection:

℞ Zinci sulphat.	gr. iv
Glycerini } aa	℥ ii.
Aq. dest. }	

M. Sig. For injection into the urethra three times daily.

Treatment of Amebic Enteritis and Dysentery.—In this condition it is recommended to keep the patient in bed and upon a liquid diet, to apply hot compresses to the abdomen, and to give enemata of a one-per-cent. tannin solution. The internal medication should consist of a strong infusion of ipecac or of the following mixture (formula of Gelpke):

℞ Cort. simarubæ } aa	3 iiss
Cort. granati }	
Vini gallici albi	Oiss.

M. Macerate twenty-four hours and then filter. Sig. A tablespoonful every two hours.

For the Cough of Phthisis VERSTRAETEN has found the action of Hydrastis Canadensis to be favorable. If the sputum is mucopurulent, its character rapidly improves, and the quantity diminishes. He prescribes pills containing from $\frac{1}{16}$ to $\frac{1}{8}$ -grain of the dry extract. Of these five are to be taken during the twenty-four hours.

For Chlorosis.—HAYEM advises the employment of the protoxalate of iron, administered in cachets just before or during each meal. The dose is at first $1\frac{1}{2}$ grains, and is gradually increased to $3\frac{1}{2}$ grains, which is not to be exceeded. After a month the use of the iron is stopped a short time. Hydrotherapy and change of air are also recommended.